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THE EVENING  
PREPARATORY  
AND BUSINESS  
SCHOOLS

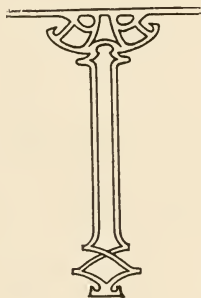
**Catalogue**  
**1915—1916**

BOSTON COLLEGIATE  
INSTITUTE



THE  
EVENING PREPARATORY  
AND  
BUSINESS SCHOOLS  
OF THE  
BOSTON COLLEGIATE INSTITUTE

1915 - 1916



Published by  
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

# Calendar

## Summer Term

1915

June 1	Opening of Summer Term
June 17	Bunker Hill Day (Holiday)
Sept. 6	Labor Day (Holiday)
Sept. 14 to 17	Examinations
Sept. 17	Close of Summer Term

## Winter Term

1915 16

Sept. 22, 23, 24, 25	Registration
Sept. 27	Opening of Winter Term
Nov. 26	Thanksgiving Day (Holiday)
Dec. 18 to 25	Christmas Recess
Jan. 17 to 21	Examinations
Jan. 21	Close of Winter Term

## Spring Term

1916

Feb. 1	Opening of Spring Term
Feb. 22	Washington's Birthday (Holiday)
May 15 to 19	Examinations
May 19	Close of Spring Term

## Summer Term

1916

May 29	Opening of Summer Term
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# Organization

General Administrative Officers  
of the  
**BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION**

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LEWIS A. GROSSETT, *Treasurer*

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ALBERT H. CURTIS

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(Harvard University)

Principal

JAMES A. BELL, Ph.B., A.B.

(Grove City College) (Harvard University)

Assistant Principal

CHARLES L. CLEAVER, Ph. B.

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*Mathematics*

WILLIAM A. LACKEY, A.B., LL.B.

(Harvard University) (Boston University)

*English and Arithmetic*

JAMES METIVIER, A.B.

(Harvard University)

*Languages*

JAMES B. TAYLOR, A.B., A.M.

(Harvard University)

*English*

WALTER A. BALDWIN, A.B.

(Ohio Wesleyan University) (University of Chicago)

*Physics and Chemistry*

WAYNE M. SHIPMAN, A.B.

(Harvard University)

*History and Languages*

JAMES LOGIE

(Glasgow University)

*Spanish*

WILLIAM L. ESTERBERG, B.C.S.

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*Shorthand and Typewriting*

HARRY K. GOOD, LL.B.

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*Bookkeeping and Penmanship*

GUILLERMO RIVERA, S. B.

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*Spanish*

WILLIAM A. SWICK, A. B.

(Allegheny College)

*Mathematics*

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(Harvard)

*Languages*

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(Brown)

(Harvard)

*English*

CHARLES B. GRAY, A.B.

(University of Winnipeg)

*Typewriting*

RALPH G. WHITE, A.M.

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(Harvard University)

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(Ohio State University)

(Harvard University)

*History*

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PAUL H. HANUS, Professor of Education, Harvard

WILLIAM M. WARREN, Dean, College of Liberal Arts, B. U.



# The Evening Preparatory School

## HISTORY

The Preparatory School, one of the eight schools operated by the Boston Collegiate Institute, was founded eighteen years ago in response to the demand for instruction on the part of men who were employed during the day and could not avail themselves of the opportunities afforded by day classes. Throughout this period the School has experienced a steady growth, so that today, owing to the recent reorganization, it has the distinction of being the only Evening Preparatory or High School in the United States which gives work of the same high standard as maintained by the best secondary day schools. By maintaining such quality of work, the School has been able to prepare a large number of men for Harvard, Yale, Brown, Boston University, Tufts, Dartmouth, Massachusetts Institute of Technology, and other colleges, and for the various advanced schools of the Department of Education.

The enrollment has increased from fewer than fifty students at the beginning to almost eight hundred at the present time. To keep pace with this growth, the School has established a larger and more efficient teaching force; it has systematized and outlined the courses of study in order to do more thorough and intensive work; and it has moved into the best equipped buildings, for educational purposes, in the country.

Mere numbers, however, afford no proper test of the worth of the School. That worth is determined rather by the quality of work the institution performs, and this in turn depends on the character of its teachers and its students. The teachers are college and university trained men of large teaching experience who know of and are in sympathy with the aims and purposes of the ambitious men in the School. The students constitute a body of unusually earnest men who have entered upon their educational work as a part of the business of life, rather than as an elegant pastime. They come, in the main, from homes in which the habits of industry and economy are necessarily fostered. They feel the necessity of working and enter the evening school with definite aims for the future. All of the students are engaged in work during the day.

## **AIM AND SCOPE**

The aim of the Preparatory School is to prepare young men of intense purposes for college, scientific schools, and for the various advanced schools operated by the Boston Collegiate Institute. The subjects offered are those commonly given in the eighth grade of a grammar school and in the four years of a day high school. The amount covered in each subject during the two terms of 16 weeks each is the same as covered in a year in a day high school. This is possible, for the students pursuing the work are mature and in earnest. The work is further facilitated by the elimination of non-essentials.

## **BUILDINGS**

The location, surroundings, and physical appointments of a school are of primary importance. The location ought to be healthful, accessible, and attractive. The buildings ought to be properly heated, lighted, and ventilated, and, above all, conducive to the health and progress of students at all seasons of the year. The buildings occupied by the Association Schools combine all these good qualities. They are located on Huntington Avenue in the section of Boston noted for its institutions of learning; accessible from all parts of the city and suburbs; and free from the outside influences which distract the attention of students. Nearly four acres of land are devoted to buildings and an athletic field.

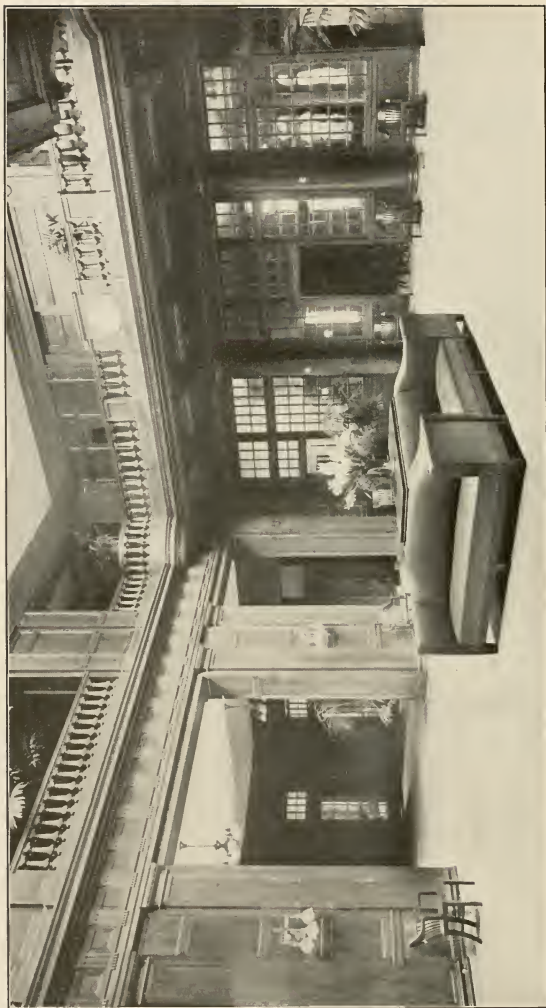
Looking at the building from the front, one gains the impression of a large square structure, 240x200x90, but this is not the case. There are, in reality, six buildings, (Administration, Assembly Hall, Educational, Natatorium, Gymnasium, and Vocational), each on its own foundation, and, with the exception of those facing the front and west, which are 90 feet high and 58 feet deep, the buildings are comparatively low, connected by corridors and bridges. This arrangement gives exceptionally fine light and air to all the buildings.

### **Administration Building**

Located in the Administration Building are the lobby, various offices of the administrative staff, the directors' room, committee rooms, libraries, reading and social rooms. This building is the social center of the plant.

### **Educational Building**

This building is 196 feet long by 58 feet wide and six stories high. In the basement are located the heating and ventilating systems of the entire plant. The first floor in-



MAIN LOBBY

cludes game, social, and club rooms, and a small assembly hall. On the second, third, and fourth floors are located class rooms, drafting rooms, and laboratories. On the fifth and sixth floors are dormitory rooms.

### **Gymnasium**

This structure is known as the Samuel Johnson Memorial Gymnasium the funds for which were provided by relatives and friends of the late Samuel Johnson. On the main floor is the gymnasium proper which is equipped with the most approved apparatus. In the building are handball and squash courts, lockers, six bowling alleys, shower baths, rooms for special exercising, fencing, wrestling, etc., a running track, and a visitor's gallery. The gymnasium is so arranged that, by a system of sliding partitions, it can be divided into one, two, or three separate compartments, making it possible to conduct a number of activities at the same time. Many new features in gymnasium construction and equipment have been introduced.

### **Natatorium**

This building located between the Assembly Hall and the Gymnasium, is easily accessible from the locker rooms. The swimming pool is 75 feet by 25 feet and is under a glass roof which admits abundant light and sunshine. The pool is supplied with filtered salt water from our own artesian well, and is heated to a proper temperature by an elaborate system of pipes. The Natatorium is one of the largest and best equipped of its kind.

### **Vocational Building**

The Vocational Building is located directly back of the main group. This is a substantial structure of three stories, 150x58, in which are located the woodworking plant, the electrical laboratories, machine shop, and lecture halls.

### **Assembly Hall**

The Assembly Hall has a seating capacity of nearly 500. A large stage, suitable for entertainments of all kinds, is provided. The moving-picture machine provides a feature which is of interest to our students. Many films on educational topics are shown each term.



GENERAL LIBRARY



REFERENCE LIBRARY

# General Information

## Terms

The year is divided into three terms of sixteen weeks each. The winter term includes the period from October to February, the spring term from February to June, and the summer term from June to October.

The work is so conducted that in any two terms a year's work in any subject as counted by high schools is completed. By attending full calendar years, a four year high school course can be completed in considerably less than four years. Students pursue ordinarily only three subjects each term.

Beginning classes are offered in a large number of subjects each term. It is possible for a student to enter at the beginning of any term and select courses suited to his advancement. A number of half courses are also offered each term.

## Examination

Examinations are held in all subjects at the close of each term and the standing of each student who has completed a term's work is recorded in our record books. If a student pursues a course part of the term and then drops it, no record of his class standing is kept at the office. Students are advised, therefore, to pursue courses in full and take all examinations, for later they may need an official rating. While the standing of students in regard to scholarship is determined by means of examinations, regularity of attendance and faithful performance of required work are considered equally essential.

The grading is as follows:

A, 90–100%,	Very Good
B, 80– 90%,	Good
C, 70– 80%,	Fair
D, 60– 70%,	Poor
F, below 60%,	Failure
Passing Grade:	60%

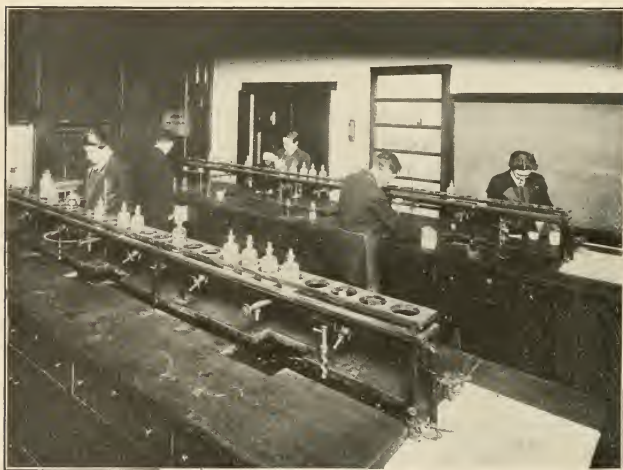
## Sessions

The school sessions are held on each week day evening, excepting Saturday, from 7 to 10 o'clock. A student's schedule may include 1, 2, 3, 4, or 5 evenings a week, depending on his





PHYSICS LABORATORY



CHEMISTRY LABORATORY  
(One of Three)



selection. As a rule, subjects are given on two evenings a week. It must be remembered, however, that the preparation of lessons is all done outside the classroom. It has been found that because the students are mature and in earnest they can do the work of the course in fewer recitation periods than is customary in a day high school.

### **Text Books**

Students buy their books. It has been found advisable for they will be a source of great convenience in future years. The book store has on hand all books and supplies used in the school. These are sold at slightly lower rates than prevail in the public book stores.

### **Libraries**

The school has excellent facilities for study in the libraries and reading rooms. Besides the special reference libraries of the various school departments which are equipped with dictionaries, cyclopedias, and special texts for carrying on the work of the school in the most effective way, the students have access to the general library.

### **Preparation For College**

Students who expect to enter college are advised to consult the catalog of the institution they will enter to ascertain the work which is required. By conferring with the principal, the most economical way in which a course can be pursued will be outlined. Students who maintain the grade of "B" or above in any subject may be certified for college. The Preparatory School is the evening division of the Huntington School.

The tests given at the close of a course are modeled after college entrance examinations. The standards maintained are similar to those of the best day schools.

### **Special Students**

A number of our students do not expect to enter higher institutions of learning. To these students the School offers special courses or combinations of subjects which will benefit them in the work in which they are engaged during the day. By consulting with the principal, a program of studies will be arranged, adapted to the student's special needs.

### **Tutoring**

Every year a large number of men come to us to be tutored. We are able to furnish tutors in any preparatory subject at \$1.00 an hour. The members of the regular faculty are usually available for such work. We are able, however, owing to our proximity to higher institutions of learning, to furnish tutors, should members of our own force be unable to arrange suitable hours.



**BOWLING ALLEYS**



**SOCIAL AND GAME ROOM**

## **Discipline**

One reason why the students of the school are able to progress rapidly is that no time is wasted in obtaining discipline. Our students are earnest men who are sacrificing time and money for an education. Not since the school has been founded has it been found necessary to expel or even suspend a student. Our teachers use the entire recitation period for instruction. The work is not retarded by frequent requests for attention.

## **Students' Tickets**

Students residing in suburban towns may, on nearly all railroads, travel to and from school at greatly reduced rates. Those under twenty-two years of age are eligible to receive reductions. Application should be made at the office of the railroad regarding these rates.

## **Dormitory Rooms**

Students from a distance may, by early application, secure rooms in the building. Excellent table board can be had, also. The charge for rooms ranges from \$2.00 to \$4.00 a week; good table board from \$5.00 a week up. The rooms and dining facilities are not under the direct management of the school, but of the Boston Y. M. C. A. Students of the school who room in the building are therefore subject to the regulations of the Association.

## **Scholarships**

As an aid to worthy men who desire an education and are unable to pay in full even our slight charges, a limited number of scholarships have been provided, which will be judiciously distributed. Application should be made to the principal of the school.

In addition to these scholarships there are others in the schools of the Boston Collegiate Institute available for graduates of the Preparatory School. Each year graduates of the Preparatory School are granted free tuition for one year in the Evening Law School, the School of Commerce & Finance, the Polytechnic School, or the Co-operative Engineering School. The value of these scholarships varies from \$50. to \$125.

These are awarded to graduates who have pursued in this school ten of the fifteen units required for graduation and have maintained a ranking of at least five A's and five B's. A further condition is that the student must enter the advanced school free of conditions.

## **Lectures**

Many of the numerous lectures offered by the Association are available to members, free of charge. These are under the



BILLIARD ROOM



RESTAURANT

direction of the social and the religious work departments. Space does not permit giving detailed information of this important feature. Special pamphlets, prepared by the foregoing departments, give the list of speakers and course available.

### **Clubs**

A large number of clubs are organized and conducted by the various departments, the most important of which are as follows:

#### **Congress**

The Congress is organized similarly to the National body. Anyone may become a member by adhering to the rules of the organization and by naming the state he will represent. Members introduce bills and participate in the debates and discussions. In this way experience in public speaking is gained. We recommend that those who wish training in public address and in parliamentary practice join the Congress.

#### **Current Events Club**

Those who are not interested in the Congress may be interested in joining the Current Events Club. The name indicates the character of the Club. Each week, discussions in the form of debates take place. One can secure valuable training in public address by joining either of the aforementioned clubs.

#### **Orchestra**

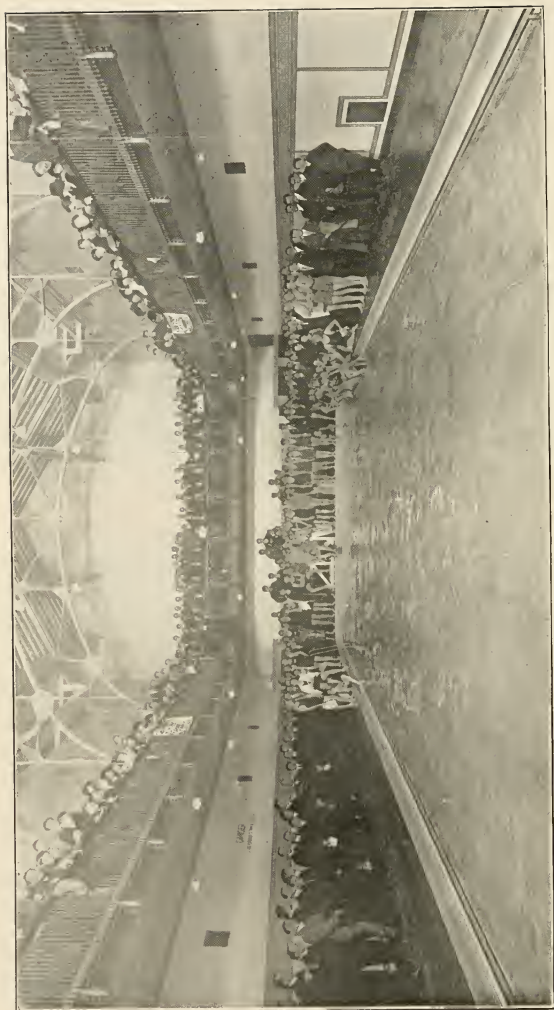
Those musically inclined will find recreation and an opportunity to improve their musical education by joining the orchestra. It is under the leadership of an experienced musician and leader, and the benefits a member derives from the rehearsals and concerts are considerable. The orchestra is in great demand throughout the Association, and finds many opportunities to make itself useful.

#### **Glee Club**

The Glee Club is another musical organization which attracts the best musical talent of the membership. It is under the direction of a man who has had much experience in choral work. Concerts are given throughout the year, and much valuable training is received by the members. Ability to read simple music is the only necessary qualification for membership.

#### **Moving Pictures**

The Association has in Bates Hall a modern moving picture machine which is used constantly to provide entertainment and instruction. Many notable educational films are shown each year, which are worthy of the attention of the students. Much information can be received in this way in a short time with little effort.



WATER CARNIVAL



## **Athletics**

By paying a small additional fee, students may avail themselves of the privileges of the gymnasium and swimming pool. Competitive games are held with the other Y. M. C. A.'s and athletic clubs. An inspection of our athletic facilities will convince you that they are the finest in New England. Opportunity is given for athletics before the opening of the evening sessions or during the vacant periods.

The following teams are organized each year: Basket ball, swimming, track, gymnastic, wrestling, baseball, tennis, bowling. There are usually a number of teams for each branch of sport, making it possible for every student to play on one of them.

For those not interested in games, opportunity is given to join one of the many gymnasium classes which are directed by experienced men. The rates for the various branches of physical work may be had by applying to the Director of the Department of Recreation and Health.

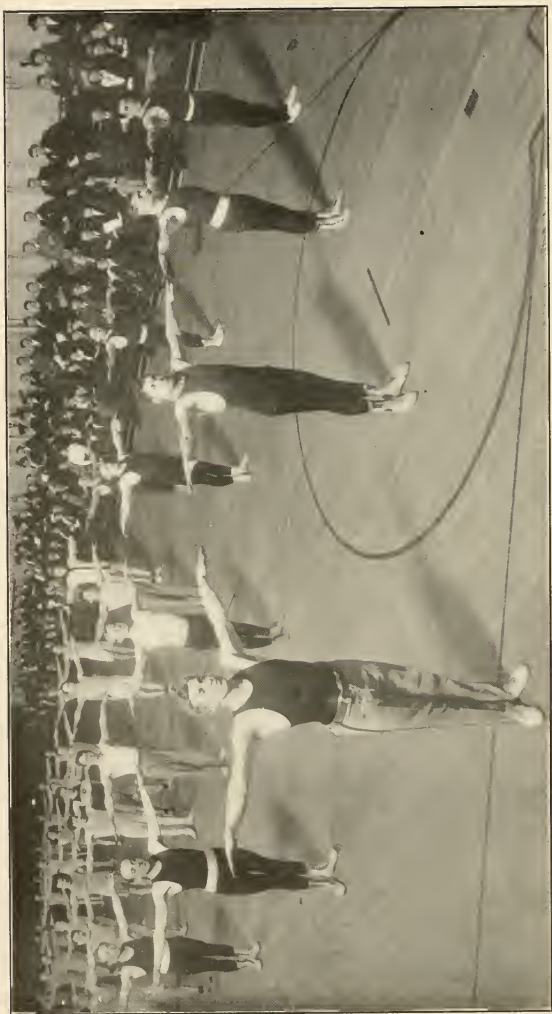
## **Accepts Diploma**

The Board of Bar Examiners accepts the diploma of the Preparatory School. This is issued to students who have completed fifteen units of work or what is ordinarily required for graduation from a day high school. (See page 33),

## **Membership**

All educational work is conducted as part of the larger activities of the Young Men's Christian Association. The Boston Association now has nearly 7000 members almost half of whom are enrolled in the Department of Education. The annual membership dues are \$2.00. By paying this sum, one becomes a member of the largest association in the world and may enjoy, free of additional cost, many features of its great work. Such membership also gives one privileges in other associations in America, subject to local regulations. By paying certain additional fees larger privileges are obtained in the various departments.





GYMINASIUM

# Courses of Study

## ADMISSION

Any young man of good moral character, regardless of occupation or creed, who has completed at least six grades of a grammar school course, or the equivalent, may be enrolled in the School.

Courses adapted to the needs and education of such applicants are offered each term. It is not advisable, however, for one younger than fifteen years of age to enroll, for the courses are adapted to those who are sufficiently mature and physically able to work during the day and to study at night.

## The Departments

### ENGLISH

The work of the Department of English comprises courses in composition and literature, which aim:—(1) to give the student a command of correct and clear English, spoken and written; and (2) to enable him to read with intelligence and appreciation.

To secure the first end, training in grammar and the simpler principles of rhetoric, and the writing of frequent compositions are essential. The student learns to spell, capitalize, and punctuate correctly. He is further able to show a practical knowledge of the essentials of English grammar, including ordinary grammatical terminology, inflections, syntax, and the use of phrases and clauses; a thorough training in the construction of the sentence; and familiarity with the principles of paragraph division and structure.

To secure the second end, the student reads and studies in the classroom the works named in the various courses.

#### **English Aa, Ab—Elementary Course**

This course deals largely with spelling, punctuation and applied English Grammar, with special drill in all kinds of commercial papers, notes, checks, drafts, bills, and receipts; telegrams and letters of introduction, recommendation, and application. (This course is usually required of all those who are not grammar school graduates.)



DRAFTING ROOM



PHYSICS LECTURE ROOM

## **English 1a, 1b**—Applied Grammar

Composition: Elementary work in the theme, the paragraph, and the sentence; Letter Writing. Irving's Sketch Book; Scott's Marmion; Longfellow's Courtship of Miles Standish; Macaulay's Lays of Ancient Rome.

## **English 2a, 2b**—Rhetoric and English Composition, Oral and Written.

Bunyan's Pilgrim's Progress; Homer's Iliad; Eliot's Silas Marner; Stevenson's Treasure Island; Coleridge's The Ancient Mariner.

## **English 3a, 3b**—History of English Literature.

Argumentation, written and oral. Addison's Sir Roger de Coverly Papers; Tennyson's Idylls of the King; Shakespeare's Merchant of Venice and Julius Caesar.

## **English 4a, 4b**—History of American Literature

Composition, oral and written. Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso and Comus; Burke's Speech on Conciliation with America; Macaulay's Life of Johnson; Palgrave's Golden Treasury.

## **English 5a**—English Composition. (Advanced Course).

A careful training in the principles of prose composition with special emphasis upon usage. Particular attention is given to punctuation, the construction of sentences and paragraphs, and the use of words. Besides the daily themes, four or five longer themes of 1000 words or more, involving practice in Exposition, Description, Narration and Argument, are written. The object of the course is to enable the student to express his thoughts freely, clearly, and forcibly; the writing of straightforward English is the end toward which the efforts of the student are directed. The course is similar to English A of Harvard University. Open to men who have completed course 4a and 4b and others who can profit thereby.

## **English 6a**—Public Speaking

This course is intended to provide systematic training in enunciation, inflection, emphasis, and other essentials of public speaking. A practical and business-like style of speaking is inculcated, the chief aim being to train the student to think upon his feet and express his thought effectively. Timid speakers are encouraged to persevere and do their best. Considerable time is given to extempore speech, to debating and to the presentation of argumentative material

## **LATIN**

A careful study of Latin benefits the average student in several ways. In addition to quickening his observation,

strengthening his reasoning powers, and fortifying him in the ability to do hard work, it gives him an understanding of English grammar such as he cannot possibly obtain from exclusive drill in English alone, and furnishes the essential principles required in the study of any of the modern European languages. Familiarity acquired with the meanings of Latin words and with important principles of word formation enables the student to recognize on first sight the meanings of a large percentage of English words that will be new to him, and gives him an insight into the real significance of hundreds of words with which he is already loosely familiar. The practice of accurate translation gives the student greatly increased facility in the choice of English words, and helps him thereby to make forceful use of the English language.

**Latin 1a, 1b**—Beginner's Latin

First year Latin lessons complete. Easy Latin prose.

**Latin 2a, 2b**—Caesar, Sallust and Latin Composition

Review of constructions, forms and application of rules of syntax.

**\*Latin 3a, 3b**—Cicero's Orations Against Cataline

For the Manilian Law, for Archias. Grammar. Composition. Translation at sight from Caesar and Sallust.

**\*Latin 4a, 4b**—Virgil's Aeneid

Translation at sight from Ovid, Sallust and others. Composition.

\*Classes will be organized only when a sufficient number enroll.

## GERMAN

The aim of the first year is to enable the student to acquire a correct pronunciation, to gain a complete mastery of fundamental grammatical forms and principles, and to get a vocabulary that will make it possible to read simple German texts intelligently.

In the second year the forms and principles of German grammar are thoroughly reviewed, the working vocabulary constantly enlarged, and exercises both in composition and conversation continued daily.

**German 1a, 1b**—

Harris' German Lessons; Guerber's *Marchen und Erzählungen*. Special emphasis is placed on pronunciation and the acquiring of a vocabulary.

**German 2a, 2b**—

Study of grammar continued. Special attention to syntax. Selected readings. Students who complete German 1 and 2 are prepared to take college examinations in Elementary German.

**\*German 3a, 3b—**

Becker, Deutsch fur Auslander; Wildenbruch, Das edle Blut; Baumbach, Die None von Lilencron, Anno 1870; Keller, Kleider machen Leute; Heine, Die Harzreise; Meyer, Das Amulet; German Composition.

**\*German 4a, 4b—**

Becker, Deutsch fur Ausländer; Schiller, Wilhelm Tellor Die Jungfrau von Orleans; Lessing, Minna von Barnhelm; Goethe, Egmont, Hermann und Dorothea, and critical essays on Germany, its people and its literature.

## ROMANCE LANGUAGES

### FRENCH

The courses in French are planned with the purpose of giving to students (1) an appreciative comprehension of French, both as a literary and as a spoken language; and (2) a sufficient knowledge to fit them for advanced work in higher schools. The essentials of the grammar are thoroughly mastered by continued drill with constant application. The attainment of a good pronunciation receives careful attention, and from the beginning the ear of the student is trained to understand spoken French. Conversation is included in every course.

**French 1a, 1b—**

French Grammar. Selected readings. Special emphasis placed on pronunciation and the acquiring of a vocabulary.

**French 2a, 2b—**

French Grammar. Special composition work and selected readings. Students who complete both French 1 and 2 are prepared to take college entrance examinations in Elementary French.

**\*French 3a, 3b—**

Fraser and Squair's Grammar; Lamartine, Revolution Francaise; Selections from Maupassant, Th. de Banville, Meilhar at Halevy, and others; Koren, French Composition.

**\*French 4a, 4b—**

Classic plays, and selections from Balzac, and others; Victor Hugo, Hernani; Rostand, Cyrano de Bergerac; critical essays on France, its people and its literature.

### SPANISH

Owing to the opening of the Panama Canal, Spanish has become the leading Romance language in America today.

Many young men, seeing the great opportunities in business with the South American countries, feel that a command of Spanish is essential to success. The Department, therefore, is prepared to give to the student a practical command of Spanish as a medium of expression.

**Spanish 1a, 1b**—Elementary Course

The basis—correct pronouncing and accent. Conversation. Mansanto & Languellier's Grammar and Text Books.

**Spanish 2a, 2b**—Continuation of Spanish I

Grammar, conversation and composition, suitable Text Books.

**Spanish 3a, 3b**—Commercial Course Entirely

Reading, writing, translating and conversing on commercial subjects: commercial correspondence, business terms, South American customs. A forceful and easy style of expression. Monsanto & Languellier's Grammar and Harrison's Commercial Correspondence.

**Spanish 4a, 4b**—Advanced Commercial Course

Pitman's Spanish Correspondence.

## GREEK AND ITALIAN

Classes will be organized in these languages if the number of applicants is large enough.

## HISTORY

The aim of the department of History is to give a broad knowledge of the vital conditions in the growth of the leading countries of the world. This includes the study not only of the important facts, but more especially of the processes of development in government, society, business, religion, and education. The past is studied that the present may be better understood.

**History 1a**—United States History( Elementary Course)

This course is primarily for those students who have never studied American history. Its aim is to prepare one for a thorough study of United States History.

**History 2a, 2b**—United States History

Division 2a deals with the Colonial Period—from the era of discovery to the meeting of the Federal Convention in 1787.

Division 2b includes the National Period—from the foundation of the constitution to the present time.

**History 3a**—English History

A study of the great lessons of Anglo Saxon-development in freedom and intelligence.



## **History 4a, 4b—Ancient History**

The first division is devoted to the history of Greece; the second, to the history of Rome. The course aims to place the principal emphasis upon the characteristic elements of these civilizations and the contributions which they made to modern civilization.

## **GOVERNMENT AND ECONOMICS**

While these courses are designed to serve as preparatory courses for those planning to enter business, and for those expecting to take up advanced work in some special field, they are intended, also, to give to the general student information and training of value in the exercise of intelligent citizenship. Some grasp of general principles, some knowledge of concrete problems, and some insight into current practical problems will be derived from these courses.

### **Government 1a, 2b—American Government**

This course includes national, state, and local government. Based on Bryce's American Commonwealth.

### **Economics 1a, 1b—Principles of Economics**

This course is designed not only to give an introduction to economic theory, but also to furnish some insight into a number of practical economic problems. Thus, there are elementary studies of trade economics, currency, trusts, the tariff, and socialism. Based on Bullock, Fisher, Taussig, Seager and other standard authors; supplements by questions and problems.

## **MATHEMATICS**

The purpose of the courses in mathematics is two-fold: (1) to make the student acquainted with such mathematical methods as are most likely to be useful in the study of other subjects and particularly in practical affairs; and (2) to give him a thorough training in such fundamental branches as shall furnish a sufficient basis for advanced mathematical studies.

### **Mathematics 1a, 1b—Arithmetic**

A course in general arithmetic, covering much of the ground usually covered in grammar schools. The course includes the most essential subjects.

### **Mathematics 2a, 2b—Algebra I**

The essential operations of algebra to quadratics. The emphasis is on the fundamental principles.

### **Mathematics 3a—Algebra II**

Covers the college entrance requirements. Designed for students who have acquired the fundamental principles.

### **Mathematics 4a, 4b—Plane Geometry**

The five books. A large number of original exercises stimulate the power to reason clearly and to derive logical proofs. Special attention is given to those who expect to take entrance examinations.

### **\*Mathematics 5a—Solid Geometry**

The standard theorems in solid and spherical geometry. Stress is laid upon numerical exercises involving mensuration of solid figures. This course is intended primarily for those who are preparing for college.

### **\*Mathematics 6a—Trigonometry**

This course is intended for those who wish to offer trigonometry for college entrance, or for those who intend to take up engineering work.

\*For outline course in higher mathematics see Polytechnic School catalog.

## **SCIENCE**

### **Science 1a, 1b—Physics I**

The work offered in physics presents an elementary introduction to the general subject. Mechanics, heat, magnetism, electricity, and light are taken up, usually in the order named. The course aims to encourage in the student a habit of observation, and to develop his ability to think intelligently about simple physical facts, many of which are observable in every day life. It will prepare anyone who completes the work satisfactorily to pass the entrance examinations of any college.

### **Science 2a, 2b—Inorganic Chemistry I**

The general purpose of this course is similar to that of Physics I. The work is divided between lecture-room discussion and demonstration of the fundamental principles and facts of the science, on the one hand; and, on the other, experimental work in the laboratory by the students individually. This latter work is closely supervised and the student is required to do his work neatly, observe results carefully, and endeavor to reason from these results to legitimate conclusions. He must also keep systematic records of this work, as directed. At least fifty experiments are performed.

### **Physical Geography 1a—**

This course gives a large amount of practical information, bearing directly on the physical conditions that affect customs, occupations, and food distribution.

### **Political Geography 1a—**

A study of the various countries, relative to their commercial intercourse. The student is made familiar with the

principal waterways, cities, products, imports, exports, etc. The course is a continuation of History 1a.

**Physiology and Hygiene 1a—**

This course includes a study of the structure, the various systems and organs of the body, and the observance of the laws of health.

**REQUIREMENTS FOR GRADUATION**

Students are graduated from any one of the three courses when fifteen units of work have been completed.

A unit of work as counted by a day school or by College Entrance Boards is the amount covered in a subject meeting four or five times a week during a school year. In this school it is the equivalent amount of work completed in a subject in two terms of sixteen weeks each. The same standards are maintained as in the best day schools.

**DIPLOMA COURSES**

The following courses of study leading to a diploma are offered:

**Classical Course**

Students who prepare for Harvard or classical courses of other colleges are advised to select this course.

Required		Electives	
English	4 units	Two and one-half units are to be selected from the following:	
Algebra	1½ “	Solid Geometry	½ unit
Plane Geometry	1 unit	French	2 or 3 units
Latin	4 units	German	2 or 3 “
History	1 unit	Ancient History	1 unit
Science	1 “	U. S. History	1 “
		Physics	1 “
		Chemistry	1 “

**Scientific Course**

Students who prepare for the Mass. Institute of Technology or for other scientific schools are advised to pursue this course. The required work is uniformly asked for by the best scientific schools.

Required		Electives	
English	4 units	Two are to be selected from the following:	
Algebra	1½ “	Trigonometry	½ unit
Plane Geometry	1 unit	Chemistry	1 “
Solid Geometry	½ “	Mechanical Drawing	1 or ½ unit
German	2 units	Adv. French	1 unit
French	2 “	Adv. German	1 “
History	1 unit		
Physics	1 “		

## General Preparatory Course

This course is recommended for those who wish merely a secondary school course. Considerable election is permitted making it possible to complete a course which will give a broad training or admit to college.

Required	
English	4 units
Algebra	1 unit
Latin, French, German or Spanish	2 units
History	1 unit
Science	1 "

## Electives

Six are to be selected from the following electives, to make a total of fifteen, the number required for a diploma.

Algebra II	$\frac{1}{2}$ unit
Plane Geometry	1 "
Solid Geometry	$\frac{1}{2}$ "
Trigonometry	$\frac{1}{2}$ "
Ancient History	1 "
Physics	1 "
Chemistry	1 "
Physiology	$\frac{1}{2}$ "
Phys. Geog.	$\frac{1}{2}$ "
Com. Geog.	$\frac{1}{2}$ "
Economics	1 or $\frac{1}{2}$ unit
French	1, 2, or 3 units
German	1, 2, or 3 "
Latin	1, 2, 3 or 4 units
Spanish	1, 2, or 3 units
Bookkeeping	1 unit
Advanced Bookkeeping or Accounting	1 unit
Typewriting (Complete Course)	$\frac{1}{2}$ "
Shorthand (100 words per minute)	1 "
Mechanical Drawing	1 or $\frac{1}{2}$ unit
Business English	$\frac{1}{2}$ unit
Commercial Arithmetic	$\frac{1}{2}$ "
English History	$\frac{1}{2}$ "
Public Speaking	$\frac{1}{2}$ "
Advanced Composition	1 or $\frac{1}{2}$ unit
Government	1 or "
Economics	1 or $\frac{1}{2}$ "

## CERTIFICATE COURSES

Certificates are issued to students who complete the work as outlined:

Group A  
Bookkeeping  
Com. Arithmetic  
Penmanship  
Business English

Group B  
Shorthand  
Typewriting  
Business English  
Com. Arithmetic

Group C  
Bookkeeping  
Shorthand  
Typewriting  
Com. Arithmetic  
Business English

## Civil Service

The United States Government offers to the ambitious young man many advantages over private employment. It pays better salaries than do private employers for the same class of work. No day is missed and pay day is never delayed. Promotion is rapid, depending, of course, upon the individual; however, ability to advance is not checked in any way. The hours of labor are short, seven and eight hours being the general rule, and vacation allowances are liberal, 30 days being given in some branches of the service, and, in addition, 30 days' sick leave, if needed. Again, employees are perfectly safe and secure in their positions. Permanency is assured during good behavior and efficient service. The rules strictly forbid removal except for good cause, which must be stated in writing. Another advantage is the opportunity for advancement in commercial life. By using the spare time which a Civil Service position gives, one may prepare for better things either in other departments of the Government or outside of the service. No young man need deprive himself of a position which will relieve him from worry as to the security of it, and which, at the same time will give him ample opportunity for recreation and self-improvement.

### Civil Service Law

In 1883, a law, known as the Civil Service Reform Act, was passed by Congress. This law was enacted for the following purposes: (1) to procure, by means of competitive examinations, competent employees for the Government service; (2) to place Government positions beyond the control of politicians, thus making appointment depend upon fitness and not upon party affiliations; and (3) to give all an equal opportunity to attain government employment and to keep their positions so long as they show themselves faithful and capable.

The law provides for three commissioners who, with their assistants, give the examinations, correct the papers, and see that the Civil Service rules are fully complied with. These men do not have, however, any power of appointment or removal, they simply certify those eligible for positions.

The many advantages of the law, therefore, make service under the Government of the United States very desirable. Success depends upon personal merit, political "pull" and personal influence no longer being able to help the applicant. All

that is necessary is to pass the examination in order to be placed on the eligible register. If an average of 70% or more is attained in the examination, (65% or more for persons honorably discharged from the United States Military or Naval Service for disability incurred in the time of duty), the applicant becomes eligible for appointment. The higher he is marked, the more quickly will the applicant's appointment follow. The names of the three persons standing highest on the register are certified by the Commission when a vacancy occurs and the appointing officer is required to make a selection from these, with sole reference to fitness. The two remaining names are returned to the register and, together with the fourth on the list, are certified for the next vacancy.

### Positions

The positions which the Government must fill under the Civil Service Law cover a broad field. Some of these are positions in the Railway Mail Service, the Post Office Service, the Rural Free Delivery Service, the position of fourth-class postmaster in all states, the Internal Revenue Service, Departmental Service, the Life Saving Service, the Steamboat Service, Immigrant Service, etc.

The age limits and entrance salaries of some of these positions are as follows:

	Age Limits	Entrance Salary
Post Office Service	17 to 55	\$600 to \$3000
Custom House Service	18 upward	\$600 to \$1950
Railway Mail Service	18 to 35	\$900
Internal Revenue	18 upward	\$500 to \$2500
Immigration Service	20 to 55	\$1380

### Examinations

The examinations given by the Commission are of three grades or degrees of difficulty, know as first, second and third grades. The first grade is the most difficult and the third grade the least difficult. Most of them are designed to test general qualifications; thus a wide range of positions can be filled from a single kind of examination, increasing the applicants' opportunities for appointment. The subjects which cover the three grades given are **spelling, arithmetic, penmanship, geography, civil government, letter writing, copying and correcting manuscript, copying from plain copy, copying addresses, reading addresses, etc.**

The different subjects in each examination are given relative weights according to their importance. These weights represent the value of each subject in the whole examination. In order to make clear how the average grade is found in all examinations when the subjects are given different weights, the following illustration of a railway mail clerk examination will suffice:

## Railway Mail Clerk

	Relative Weights	Grades	Products
Spelling (first grade)	10	x 95	÷ 950
Arithmetic	20	x 80	÷ 1600
Letter Writing (first grade)	20	x 90	÷ 1800
Penmanship	20	x 92	÷ 1840
Copying from Plain Copy	20	x 86	÷ 1720
Geography of the United States	10	x 94	÷ 940
Total	100		8850

$8850 \div 100 = 88.5$ , average grade.

To the young man who has his evenings to himself and who has not decided what he would like to be, our course in Civil Service is open. He can devote his spare time to profitable study without interfering with his regular occupation. In this way he is qualifying for more lucrative and congenial employment. It may be that Civil Service will be used as a stepping-stone to positions outside the service.

To obtain one of the many desirable positions with the Government the very best instruction is desirable. The point is not merely to pass the examination but to rank among the highest. We are able to give proper and thorough coaching whereby the earnest student can take his examination with assurance. This is due to obtaining experienced men who have an intimate knowledge of the examinations, and are qualified to give thorough instruction. Furthermore, the personal direction by the instructor is most important to the student. Trying to prepare for an examination without skilled help is a waste of time, for the student does not know what to study.

New courses begin in September and February.

(The rate of tuition is \$15.00 a term.)

# Business School

The Business School is part of an extensive system of schools operated by the Department of Education of the Boston Young Men's Christian Association. The system includes the Business School, the Preparatory School, the Technical School, the Co-operative Engineering School, the Polytechnic School, the Automobile School, the Law School, the School of Commerce and Finance and the Huntington School for Boys. Because it is a part of such a system, giving instruction to several thousand students each year, it is able to provide for students many advantages not offered by business schools.

The school aims to provide a thorough training for those who expect to enter business pursuits. The usual courses in shorthand and bookkeeping are offered and, in addition, a general course covering the work in the shorthand and bookkeeping departments and other commercial subjects closely related to business work. There are also a large number of courses of college grade in the School of Commerce and Finance open to students of the Business School. The program of studies is therefore complete and insures to students a broad training along business lines.

## COURSES OF STUDY

Stenographic Course

Bookkeeping Course

General Commercial Course

The various courses are made up in accordance with the requirements of each pupil, approved by the principal, and include instruction in the following branches:

Bookkeeping as used in all kinds of business, Commercial Law, Stenography (Pitman), Penmanship, Typewriting (touch) Business English, Correspondence, Written and Mental Arithmetic, Rapid Calculation, Spelling, Spanish, French and German.

In addition to the foregoing subjects students who wish to take an extended course may select courses from the large list offered in the Preparatory School. There will be found all the subjects usually offered in a first-class high school. This is a great advantage to students who wish to combine a general course with their special business work to prepare them for the more responsible secretarial or accountancy positions.



## SHORTHAND AND TYPEWRITING

There are few fields which offer so great opportunities with so little outlay as shorthand. The demand for young men stenographers has never been filled, nor is it likely to be filled at present. Our aim is to put out as many first class stenographers as possible, confident, in so doing, that we are performing a two-fold service. We are supplying a constant demand, and we are starting young men in work that is not only pleasant and profitable in itself, but which can be made a stepping stone to the best positions in the business world. How often we learn that the head stenographer has been promoted to a managerial position. This happens because the stenographer is closer than any other man to the head of the firm. During the period of his employment, the manager or superintendent has been telling him about the business in the most intimate way. If the stenographer has ability, it can readily be seen that he is of necessity in line for promotion.

Not only is there opportunity to secure positions and promotion in private business houses, but there are also large opportunities in the government service for stenographers of ability. In recent years the government has employed almost exclusively male stenographers. The demand for well-trained men is far in excess of the supply. To substantiate this statement we need only quote extracts from a recently published letter of the U. S. Civil Service Commission:

"For a number of years the supply of male eligibles in stenography and typewriting has been inadequate to meet the demands of the various departments of the Government. Every effort has been made by the Commission to bring this condition of affairs to the notice of the public, both by statements published in the annual reports and other publications of the Commission and by reading notices and reviews in the newspapers.

"The salary usually paid to stenographers and typewriters upon entrance to the Government service ranges from \$720 to \$1200 per annum. Prospects for promotion, however, are excellent, especially in view of the fact that, on account of the nature of their duties, stenographers are more readily able to acquire a knowledge of the work of an office than other clerks."

## IMPORTANCE OF BOOKKEEPING

Every young man, whether he intends to enter business as a bookkeeper, or not, should have a knowledge of the principles of bookkeeping. A business or professional man who does not have this knowledge is at the mercy of his employees. He should be able to check up their work and understand the various transactions. It is a fact that 90% of the men who engage in business for themselves fail and at the age of sixty are de-

pendent upon others for a livelihood. Such failures are not caused by lack of industry but because of slipshod business methods. Many men in business figure their profits and losses on scrap paper which reaches the waste basket shortly after a careless estimate has been made. The failures would be lessened if the men had a knowledge of bookkeeping and business methods.

Hon. Chauncey M. Depew says, "A business training is absolutely necessary and the best thing that you can have, whether you come from the common school, from the academy, the seminary, or from the university."

Hon. Lyman J. Gage said, "Thirty-eight years ago I took a business course. That drill, that information, that education I look back upon and count as of the greatest practical value of any I have ever received."

Considering the short time required to become proficient in bookkeeping, every young man should avail himself of this training. It will give him a means of gaining a foothold in the business world. If he enters business for himself it may mean the difference between failure and success. The young man trained in business methods has one more asset which will aid him to climb the ladder of success.

## **THE DEPARTMENTS**

### **Bookkeeping**

In teaching bookkeeping we combine theory and practice. This method is necessary if the best results are to be secured. We teach the pupil to make entries, to post, to take a trial balance, to make statements of the condition of the business, and to close an ordinary ledger, before giving him vouchers to handle. From this point on, the work is just as practical as in any office.

Practical instruction is given in the special systems devised for certain classes of business. The science of commission, wholesale and retail, corporation accounts, etc., is thoroughly taught; the latest ideas are applied and the routine of the office strictly observed.

### **Shorthand**

We teach the Ben Pitman system of shorthand, for we have found that no other system offers a wider field for advancement than does this. The method of instruction is a combination of individual and class. The work of the individual student is corrected and errors noted, thus securing accuracy that can be gained in no other way. Herein lies the success of the student. Where it can be done to advantage, the students are grouped for dictation and practice. In this way we preserve the class stimulus while giving the individual attention necessary to insure thoroughness. Most students are able to complete the

theory work in three months. The time spent thereafter is used to get the required speed. The majority of students are able to write rapidly enough at the end of a year to hold a position. Those, however, who wish greater speed will have to spend a longer time on the course.

### **Typewriting**

The touch system of typewriting is used since it has been found that greater speed can be obtained and neater work turned out in this way. In this system, the machine is operated without looking at the keys. It is possible, therefore, for the typist to read notes while writing, thus saving time. Accuracy and neatness are indispensable, for the employer bases his estimate of the stenographer's ability upon the correctness and appearance of the typewritten page. Recognizing this fact, the school places emphasis on these qualities.

### **Commercial Law**

Instruction is given in the principles of the law of contracts, negotiable instruments, agency, bailment, partnership, corporations, insurance, real and personal property, etc. The course includes much information on the legality of every-day transactions, which is of great value to the business man. No attempt is made to make lawyers of our pupils, but we aim to give them information that will enable them to carry on business in a business-like manner.

Should students wish to pursue the study of law more extensively, they may enter the Law School of the Department of Education where a complete course in law leading to the LL.B. may be pursued.

### **Rapid Calculation**

In connection with the work in written and mental arithmetic, methods of rapid calculation are taught which greatly facilitate the pupil's work, stimulate his mind, and enable him to compute different problems with ease and rapidity. The daily work is extremely practical. Thorough drills are given, not merely in rapid addition, but in all classes of problems incident to the ordinary business office. Short-cut methods are here introduced, and students are taught to apply them in the regular accounting room.

### **Penmanship**

The ability to write well is of great importance to those who are employed in commercial pursuits. It is indispensable to the bookkeeper or correspondent; no other accomplishment, save typewriting, is of more value to the stenographer. The beautiful flourish style of writing, although valuable as an ac-

complishment, is not a necessity in business. It is the aim of this department to give the student instruction that will enable him in a short time to write rapidly, neatly, and legibly. Any one, who takes pains to practice the exercises outlined, can acquire a plain business hand while he is pursuing the course in bookkeeping or shorthand.

### **Spelling**

Correct spelling is absolutely essential to the stenographer or bookkeeper. Every student who expects to enter business work is obliged to take the instruction in spelling. The school has demonstrated that even the very poorest spellers can become proficient by close application. No attempt is made to teach students words not generally used. The words are selected from a list compiled by Dr. Ayers of the Sage Foundation who tabulated the common words used in 20,000 business letters.

### **English**

Too much emphasis cannot be placed upon the value of English to both the bookkeeper and the stenographer. Too often pupils are sent into the office with only a superficial knowledge of English grammar and the forms of correspondence. We aim to give our students a thorough training in the elements of composition and a thorough drill in all forms of correspondence. The department is especially strong, and English beyond the ordinary correspondence work is provided for those who wish to take an extended course to prepare for secretarial positions. A systematic attempt is made to increase the vocabulary of students so that they will be familiar with the words in common use and can take dictation more easily.

### **Commercial Arithmetic**

A knowledge of arithmetic is an essential qualification of the bookkeeper. Accuracy is the first demand made upon the student, and thereafter emphasis is placed on rapidity. The essential divisions of the subjects are dwelt upon to give the student a knowledge of the various computations which arise in business. Special attention is given to fractions, decimals, percentage, interest, discount, etc. Mental arithmetic is also given considerable prominence.

### **Spanish, French, and German**

Successful business men today realize that the completion of the Panama Canal, the war in Europe, and other recent events will make wonderful changes in our commercial relations. The most important change to which the people of

the United States must give attention is the recent rapid growth and development of the Latin-American republics. These countries comprise an area of 9,000,000 sq. miles (three times that of the United States) and they contain 70,000,000 people, with governments modeled after our own. Their foreign commerce amounts to more than \$3,000,000,000 annually, showing an increase of more than 200 percent since 1897.

For these reasons and the fact that our relations with these republics must soon become more intimate, we desire to call the attention of young business men to the importance of studying Spanish which is spoken by one-tenth of all the people claiming relation under the American Flag.

Beginning classes in Spanish, French and German are formed each term.

**Tuition Rates**

The tuition rates for the Preparatory and Business Schools are as follows:

	16 wks.	32 wks.
One Preparatory School subject .....	\$ 8.00	\$13.00
Three Preparatory School subjects.....	18.00	30.00
One Elementary subject .....	7.00	10.00
Three Elementary subjects .....	15.00	23.00
Civil Service .....	15.00	

The foregoing rates are for subjects meeting twice a week. Rates for subjects meeting four times a week during 16 weeks are the same as quoted for 32 weeks.

A reduction of \$2.00 from the rates as quoted is made for each subject taken after the first subject.

The laboratory fee for Chemistry is \$10. (32 weeks) and for Physics \$5. A deposit of \$3. is made in chemistry to cover breakage. The unused portion is returned at the close of the course.

Subjects included under the rates for Elementary courses are Arithmetic, Elementary History, English A, Penmanship, and Typewriting.

Students who discontinue a course but who have attended four or more recitations will be required to pay a term's tuition.

No student is permitted to transfer from one subject to another without consulting the Principal beforehand and receiving a transfer order which must be presented at the Educational Office for the proper ticket. It is not deemed advisable, however, to transfer after the first week of the term.

*The tuition rates as quoted are in addition to the membership charge of \$2.00 per annum. (See page 19).*

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# THE HUNTINGTON SCHOOL



1915 - 1916







THE  
HUNTINGTON  
SCHOOL  
FOR BOYS

WITH  
COUNTRY DAY-SCHOOL FEATURES

1915-1916

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION  
316 HUNTINGTON AVENUE

1915

# Calendar

1915

- May 1 to Sept. 1. Period of Registration
- Sept. 21. School year begins
- Oct. 12. Columbus Day
- Nov. 25, 26. Thanksgiving Recess
- Dec. 17. Close of Fall Term

1916

- Jan. 4. Winter Term begins
- Feb. 22. Washington's Birthday
- March 17. Close of Winter Term
- March 27. Spring Term begins
- April 19. Patriots' Day
- May 30. Decoration Day
- June 9. Commencement Day

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**The Boston Young Men's Christian Association**

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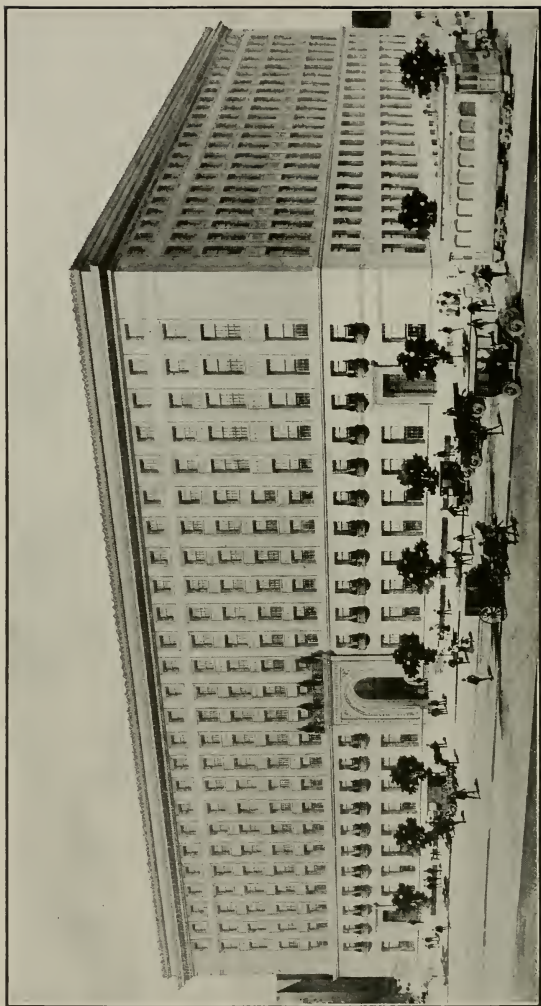
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MAIN LOBBY

# The Huntington School

**T**HE Huntington School incorporates the best features of the best schools. Here the individual is neither embarrassed nor retarded by the class, but is encouraged at all times to do his best, with the inspiration that individual help offers.

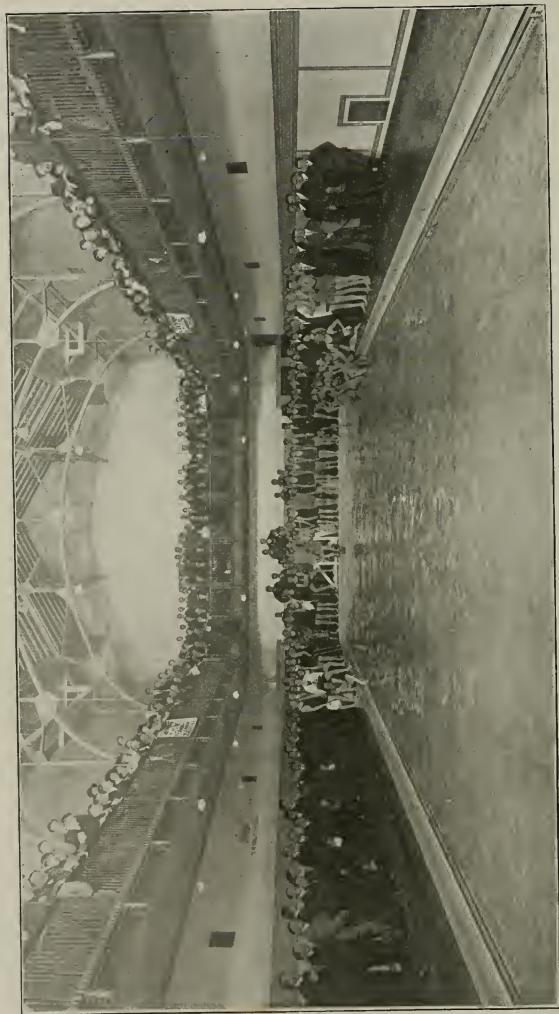
**Features** The following features will commend themselves to parents and students: male teachers, small classes, personal instruction, close supervision, firm but kind discipline, thoroughly modern methods, complete chemical and physical equipment, modern buildings, lectures, practical talks, athletics, gymnastics, social features, vocational training, a faculty of highly trained specialists.

## AIM AND SCOPE

*The School has as its chief object the preparation of boys for the colleges and the scientific schools.* It also provides training along engineering and business lines for those who do not expect to enter college. The developing of character forms a prominent part of the work of the school.

## HISTORY

The Huntington School is now in the seventh year of its history. It opened in September, 1909, with an encouraging enrollment of excellent young men from the many cities and towns of eastern Massachusetts. The attendance has doubled each succeeding year and now there are 300 boys enrolled who are preparing for colleges and technical schools or for business pursuits. Although a large proportion come from Massachusetts, yet practically every state in the Middle Atlantic and New England states is represented. The fact that it has had a rapid growth proves conclusively that it has the confidence of the public and that its administration, organization, aims and purposes are in accordance with the best principles of modern education. *The School is on the accredited list of preparatory and high schools whose certificates are accepted by the New England colleges.*



WATER CARNIVAL

## THE BUILDINGS

The location, surroundings and physical appointments of a school are of primary importance. The location ought to be healthful, accessible and attractive. Its buildings ought to be properly heated, lighted and ventilated and in every way conducive to the health and progress of students at all seasons of the year. The buildings occupied by the Huntington School combine all these good qualities. They are located on Huntington Avenue, in the section of Boston noted for its institutions of learning; accessible from all parts of the city and suburbs and free from the outside influences which distract the attention of students.

On looking at the buildings from the front, one gains the impression of a large square structure, 240x200x90, but this is not the case. There are in reality six buildings, each on its own foundation, and with the exception of the front and west side which are 90 feet high and 58 feet deep, the buildings are comparatively low, connected by corridors and bridges. This arrangement gives exceptionally fine light and air to all of them.

The six buildings are as follows: Administration, Assembly Hall, Recitation, Natatorium, Gymnasium, and Vocational.

**Administration Building** Located in the Administration Building are the lobby, various offices of the administrative staff, reading and directors' rooms, committee rooms, libraries, reading and social rooms.

**Jacob P. Bates Hall** The Jacob P. Bates Hall has a seating capacity of nearly five hundred. A large stage, suitable for entertainments of all kinds is provided.

The Hall is fitted up with a moving picture machine which is used for instruction purposes. The Chapel exercises and lectures of the school are held here.

**Recitation Building** This building is 196 feet long by 58 feet wide and six stories high. In the basement are located the heating and ventilating plant, shops and laboratories. The first floor is taken up with game, social and club rooms, and a small assembly hall. On the second, third and fourth floors are located class rooms, drafting rooms, and laboratories. The fifth and sixth floors are used for dormitories.



GAME AND SOCIAL ROOM—OLDER BOYS



GAME AND SOCIAL ROOM—YOUNGER BOYS



**Natatorium** This building is located between the Jacob P. Bates Hall and the gymnasium, and is easily accessible from the locker rooms of the latter. The swimming pool is 75 feet long by 25 feet wide and is under a glass roof admitting floods of light and sunshine. The pool is supplied with filtered salt water from our own artesian well and heated to the proper temperature by an elaborate system of pipes. The Natatorium is one of the largest and best equipped of its kind.

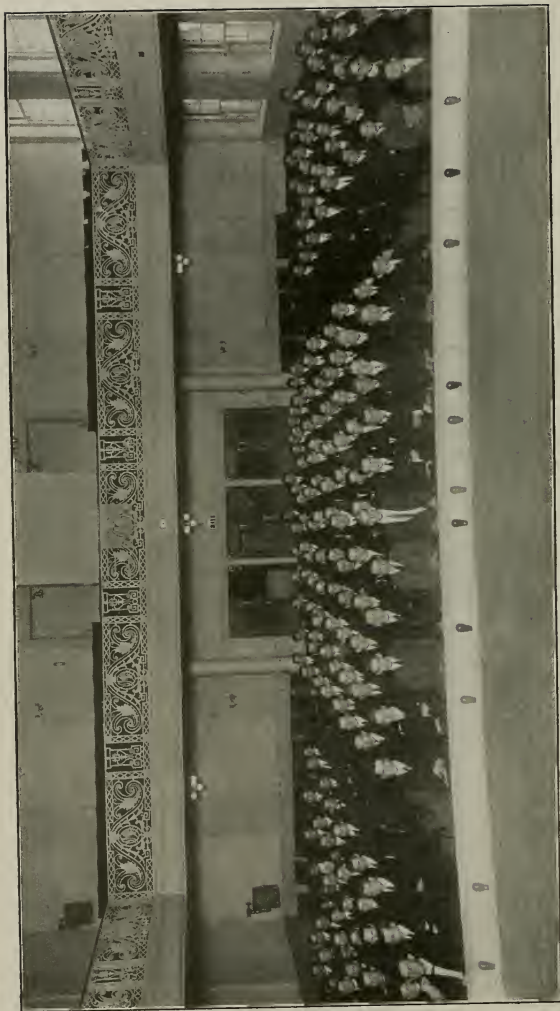
**Gymnasium** This structure is known as the Samuel Johnson Memorial Gymnasium, the funds for which were provided by relatives of the late Samuel Johnson. On the main floor is the gymnasium proper, which is well equipped with the most approved apparatus. In the building are handball and squash courts, lockers, six bowling alleys, shower baths, rooms for special exercising, fencing, wrestling, etc., a running track and a visitors' gallery. The gymnasium is so arranged that by a system of sliding partitions, it can be divided into one, two or three separate compartments, making it possible to conduct a number of activities at the same time. Many new features in gymnasium construction and equipment have been introduced.

**Vocational Building** The Vocational Building is located directly back of the main group. This is a substantial structure 150x58 and three stories high, in which are located the woodworking plant, the electrical laboratories, machine shop and lecture halls.

## EQUIPMENT

**Laboratories** The school is especially fortunate in having laboratories that are better fitted to carry on the work in the sciences than provided by most colleges. There are three large chemical laboratories, one large physical laboratory and a specially fitted lecture room, all excellently equipped with apparatus used for purposes of demonstration and for individual experiments in the courses required for admission to representative colleges.

The electrical laboratory is well equipped with apparatus of all kinds for making electrical tests and measurements.



MORNING ASSEMBLY

**Library**                   The School has excellent facilities for study in the libraries and reading rooms. Besides the special reference libraries of the various school departments which are equipped with dictionaries, cyclopedias and special works for carrying on the work of the school in a most effective way, the students have access to the general library.

**Drafting Rooms**           There are three large drafting rooms, well lighted with both natural and artificial light. The equipment provided is of the best.

**Shops**                    A liberal amount of equipment has been provided for courses in wood working and machine shop practice.



GENERAL LIBRARY



DRAFTING ROOM

## General Information

**T**HE students are under the most wholesome influences. The school is non-sectarian but thoroughly Christian in character. The discipline is firm but reasonable. The relations between teachers and students are close and friendly, constituting a most important element in the life of a school. Students are expected to cultivate self control, truthfulness and a right sense of honor. The discipline of the school is not adapted to boys who require severe restrictions. *A boy whose influence is felt to be injurious in any way will be removed from the school.*

**Reports** The progress of the students is watched very closely. Instructors make weekly reports to the Headmaster based on class work. Written tests are frequently given during the term. On the basis of the class work and the written tests, semi-monthly reports are sent to the parents, signed by the Headmaster. In cases where it is deemed necessary reports are sent more frequently, and an effort is made in other ways to secure the most effective co-operation between parents and teachers. When it seems advisable, daily reports of the students' work may be made to the home. Special reports are sent home at the close of each division of the year.

The following system of grading is used:

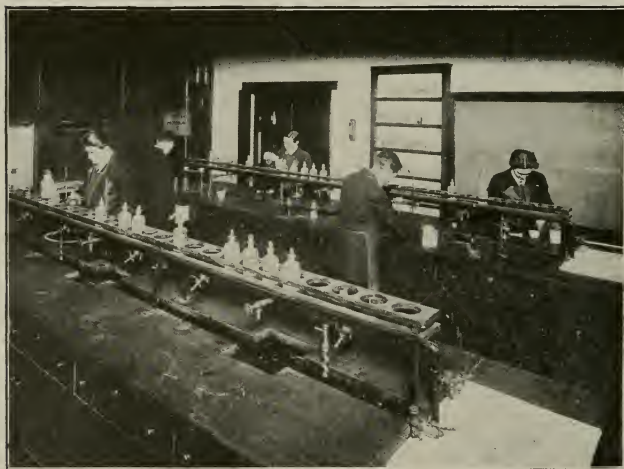
- A 90% to 100 %
- B 80% to 90%
- C 70% to 80%
- D 60% to 70%
- F Failure

The passing mark is 60%

**Sessions** The school year is divided into three terms ending respectively at the Christmas and Spring recesses, and at Commencement. There are short vacations between the terms.



PHYSICS LABORATORY



CHEMISTRY LABORATORY  
(One of Three)

**The Preparation of Lessons** The question of preventing the lowest third of the class from interfering with the progress of the upper two-thirds and at the same time doing full justice to the lowest third, has always been a difficult problem to solve.

Nearly every boy finds difficulty with at least one of his studies. This may be due to a variety of causes such as a lack of natural aptitude, defective early training, lack of mental concentration, poor memory, laziness or some similar failing. Whatever the cause may be, the case almost always calls for special treatment, if substantial progress is to be made. At this school there are two distinct ways in which we overcome these difficulties.

First: By maintaining small classes and doing much individual teaching.

Second: By employing teachers who supervise study, and give assistance to those who need it. Such supervisors remain until five o'clock each day.

**Musical Clubs** The students of the school who are musically inclined have an opportunity to become members of the Glee Club and the Orchestra. Musical specialists are employed to take charge of this work and members will find that the time thus spent will not only be pleasant but profitable. The orchestra and Glee Club unite in giving concerts during the year. Certain credit is given toward graduation to members of a musical organization.

**Y. M. C. A. Membership** All members of the school become regular members of the Boys' Department or the General Y. M. C. A., depending upon whether they are under eighteen years of age or over. Because of such membership students are permitted to enjoy a large number of privileges not generally found in private schools. Membership in the Boston Association is recognized in any association in North America.

**Students' Tickets** Students who live in suburban towns can secure railroad tickets at greatly reduced rates by applying at the office of the railroad.





STUDY HALL



PHYSICS LECTURE ROOM



**Lunches** Students can secure their lunches in our restaurant. The prices are reasonable and the food provided is of the best.

**Rooms** Students from a distance may, by early application, secure rooms in the building. Excellent table board can be had also. The charge for rooms ranges from \$2.00 to \$4.00 a week; good table board is furnished for \$5.00 a week up. Students of the School who room in the building are subject to the regulations of the Boston Young Men's Christian Association.

**Gymnasium** It has been found advisable to have a uniform suit for the gymnasium classes. Therefore,  
**Uniforms** new pupils are requested not to get their suits before entering the School. Orders will be taken in the Physical Department, immediately upon the opening of the School in the fall.

**Ventilation** The ventilation of the school building represents the highest development of modern engineering skill. Large volumes of fresh, pure air, thoroughly washed by a special process, are forced into the schoolrooms by fans in the basement and drawn out by another set of fans on the roof. Humidifiers are a part of the system. The proper amount of moisture, therefore, is maintained in the atmosphere.

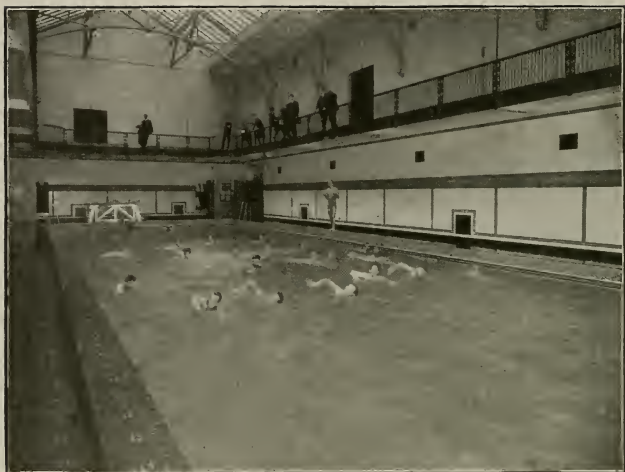
**Chapel** Each morning the students assemble for morning exercises. A portion of the period is given  
**Exercises** over to devotional exercises and the remainder is devoted to music, current events, Bible study, moving pictures of an educational nature, or a lecture on some interesting subject by a specialist. The time thus spent commends itself as a most valuable and practicable feature.

### CHAPEL TALKS

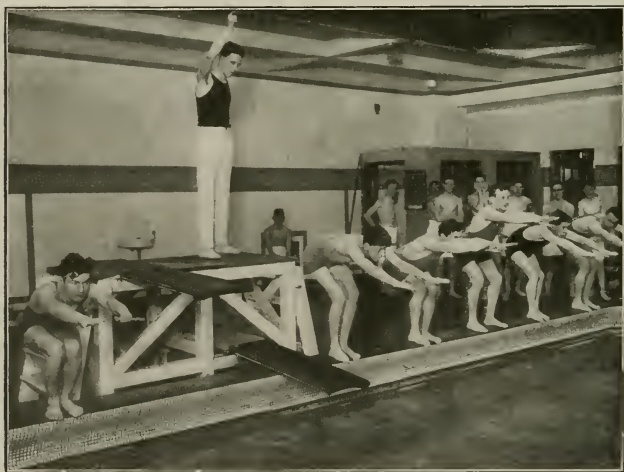
The following is a partial list of lectures given by prominent men.

"The Boy Scout Movement" HAROLD P. PAGE  
Field Scout Master for Greater Boston

"The Work Among the Lepers of India" SAMUEL HIGGINBOTTOM  
Supt. of Naini Leper Asylum, and President of Christian College, Allahabad, India



THE POOL



THE START

"Athletes of the Bible" (A series of talks)	B. DEANE BRINK Dept. of Recreation and Health, B. Y. M. C. A.
"The Ministry as a Profession"	DEAN W. W. FENN Harvard Divinity School
"Factors in Modern Civilization"	PROF. W. A. HONLINE International Y. M. C. A. Secretary
"Porto Rico and Her Music"	BYRON W. REED Former Director of Music, University of Porto Rico
"Accountancy as a Vocation"	HARRY C. BENTLEY Dean of School of Commerce and Finance
"Football Grit"	REV. J. RALPH MCGEE
"The King Among the Baggage"	Daniel Dorchester Memorial Church
"Abraham Lincoln"	
"Sanitary Engineering as a Vocation"	GEORGE C. WHIPPLE Prof. of Sanitary Engineering, Harvard Univ.
"Neutrality, and What It Means"	DR. JAMES H. WORMAN Former U. S. Consul-General to Munich, Germany
"Secretarial Work as a Vocation"	E. W. HEARNE Mass. State Secretary, Y. M. C. A.
"Making Good"	F. W. ROBINSON Employment Dept., Boston Y. M. C. A.
"Dentistry as a Profession"	DEAN EUGENE H. SMITH Harvard Dental School
"History of Y. M. C. A. Work"	GEORGE W. MEHAFFEY General Secretary, Boston Y. M. C. A.
"Occultism"	C. F. B. SALDANHA
"India and her Customs"	Public Lecturer and Entertainer
"Mechanical Engineering as a Vocation"	A. E. NORTON Asst. Prof. Engineering Drawing, Harvard University
"The Manufacture of a Shoe" (With moving pictures)	JOHN F. O'CONNELL United Shoe Machinery Co.
"The High Cost of Living and How to Meet It" (A series of talks)	FRANK P. SPEARE Director of Education, Boston Y. M. C. A.
"Medicine as a Profession"	DR. F. M. BRIGGS Secretary Tufts College Medical School
"Independence"	CHARLES R. DRUM
"Playing the Game"	Writer and Lecturer, of Syracuse, N. Y.
"Health"	DR. F. H. MCCARTHY Boston University Medical School
"Hindu Customs"	A. C. HARTE
"Y. M. C. A. Work in India"	Associate Sec'y, Y. M. C. A. in India
"Agriculture as a Vocation"	ALTON E. BRIGGS
"Distribution of Food Products"	Executive Sec'y Boston Fruit & Produce Exchange



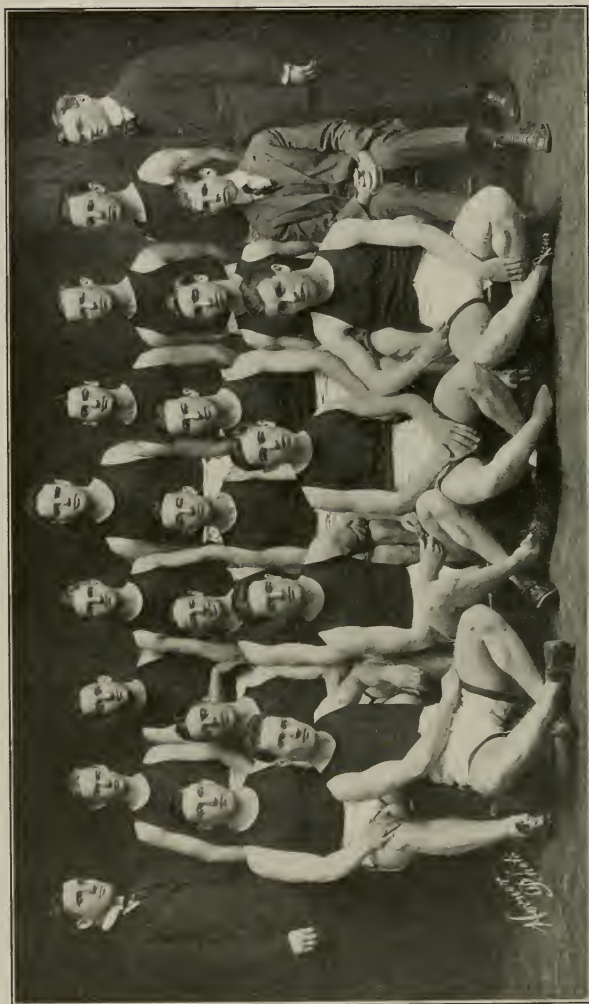
MANDOLIN CLUB

**Organization**      The Huntington School enrolls 300 boys. It is so organized, however, that the advantages of the large school and of the small school are retained. The students are divided into four groups: the preparatory year, the business division, the technical division and the preparatory division, each under the direction of a supervisor. They are again sub-divided into units of from twenty to twenty-five boys. Each of these units is in charge of a head of a department who is assisted by an instructor and a clerk who keeps all records. Each teacher of the school, therefore, is responsible for twelve to fifteen boys. Reports of class standing are made to the head of a unit, known as a section head, who in turn issues reports to students under him. In this way the school keeps in close touch with each student and with the parents.

Excepting where prolonged illness interferes, a student does a week's work in a week's time. The student who absents himself from any recitation or recitations is obliged to return on the following Saturday morning and take an examination on the work missed.

**Recreation and Health**      Few schools have the facilities for physical training that are found at Huntington. The gymnasium with its running track, three basketball courts, wrestling room, special exercising room, handball courts, and bowling alleys, is one of the finest and best equipped in New England. The swimming pool under a glass roof, filled with filtered salt water, and heated to the proper temperature, compares favorably with the best pools in the country.

The outdoor facilities are exceptional for a city school, making it possible to introduce many features into the work common only to country schools. Adjoining the building are twenty acres equipped for athletics. Here are located four tennis courts, outdoor gymnasium, handball court, basketball courts, jumping pits, board track, cinder track with a 100-yd. straightaway, and baseball and football fields. The arrangement the school has with the Boston Athletic Association for rowing, and our proximity to the Boston Arena where ice hockey is played, gives additional facilities for exercise.



TRACK TEAM  
NEW ENGLAND INDOOR TRACK CHAMPIONS

Before students are assigned to physical work they are given physical examinations by the physician who also advises as to the kind of exercise best suited to the needs of each student. All students are required to take physical work which has for its aim the all round development of the body. In addition to this work students participate in the games and sports fostered by the school.

A large variety of sports are offered each season. During the fall term a selection is made from football, cross country, track, tennis, outdoor basketball, association football, and field hockey; during the winter term track, indoor and outdoor basketball, swimming and hockey; during the spring term baseball, track, tennis, soccer, cross country and rowing. Each sport is directed by experienced teacher coaches who are assisted by student leaders.

The school is fortunate in having on its regular teaching force ten men who were prominent in athletics at college, and have had experience in directing athletics.

The school maintains that the greatest amount of good is secured through a system of physical training that gives each boy an opportunity to exercise every day under the leadership of men whose standards of living are right.

	The school is in session five days each week.
<b>Hours of Attendance</b>	Attendance on Saturday morning may be required of students who are behind in their work, or for disciplinary reasons.

The preparatory year follows the same schedule as Forms 1, 2 and 3. When advisable, pupils in the preparatory year may be dismissed at 3.00.

Supervised study between 4.00 and 5.00 for all Forms is optional with parents.

Pupils of the Junior Division who remain until 5.00 will usually be able to prepare the assignments for the following day.

Pupils of the Senior Division who remain until 5.00 can usually, by the addition of one hour home study each day, prepare assignments for the following day.





JUNIORS IN THE GYMNASIUM



ON YOUR MARK



The daily schedule follows:

JUNIOR DIVISION	SENIOR DIVISION
Forms 1, 2 and 3	Forms 4, 5 and Senior
8.55 to 10.20—recitations	8.55 to 10.20—recitations
10.20 to 11.00—assembly and study	10.20 to 11.00—assembly and study
11.00 to 12.20—recitations	11.00 to 1.00—recitations
12.20 to 1.00—lunch	1.00 to 1.40—lunch
1.00 to 1.40—recitations	1.40 to 2.20—recitations
1.40 to 3.00—recreation period	2.20 to 4.00—recreation period
3.00 to 4.00—recitations	4.00 to 5.00—study
4.00 to 5.00—study	

# Courses of Study

## Entrance Examinations

Pupils who have completed the fifth grade of a public school will be admitted to the Preparatory year without examination. Pupils who have not been prepared in the public schools will be required to pass examinations in the following subjects:—

**English.** Ability to read English at sight readily and intelligently, to spell common words, to reproduce a short story after hearing it read.

**Arithmetic.** Familiarity with the fundamental operations and simple fractions, and ability to perform simple practical problems.

**Geography.** A knowledge of the most important parts of elementary geography as it relates to the United States and Massachusetts.

Boys in this grade range in ages from nine to thirteen years. No boy over thirteen will be admitted.

## PREPARATORY YEAR

**English Literature.** Irving's "Rip Van Winkle," "Legend of Sleepy Hollow"; Dicken's "A Christmas Carol"; Scott's "Ivanhoe"; Longfellow's "Courtship of Miles Standish"; Selections from Elson's Reader.

**Language and Composition.** Dictation, oral and written compositions, letter forms, paragraphing, spelling, memorizing of good literature.

**Grammar.** Simple analysis of sentence, recognition of parts of speech, memorizing of good literature.

**History.** European beginnings of American history. American history through the Revolution.

**Arithmetic.** Review of the work of the fifth year. Simple and decimal fractions, denominate numbers, introduction to percentage.

**Geography.** A review of the essentials of the work of the fifth year. Elements of physical geography, and application to Africa, Australia, and eastern North America. Special study of Massachusetts.

**Penmanship.** The Palmer system of penmanship.

**Drawing.** Map drawing, theory of color, water color work.

**Music.** Drill in the essentials of music. Chorus work.

**Physical Training.** Simple class gymnastics, games, and dance steps.

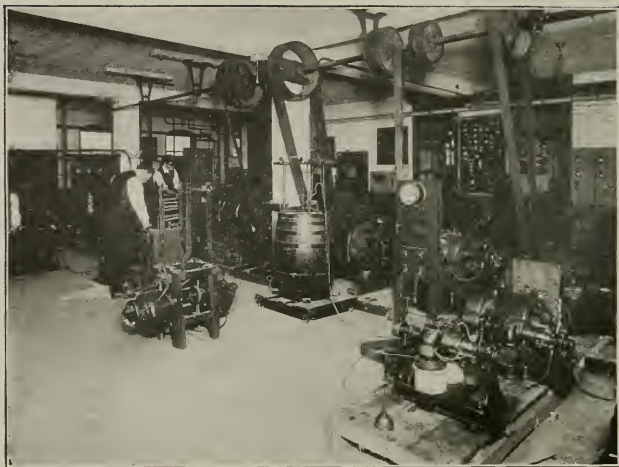
## UPPER SCHOOL

### Entrance Examinations

Pupils who have completed the Preparatory year or the sixth grade of a public school will be admitted to the First Form of the Upper School without examination. All other pupils will be obliged to satisfy the School that they have satisfactorily completed an equivalent course of study.

Pupils in the First Form range in ages from eleven to fourteen. No pupil over fourteen years of age will be admitted to this form.

The courses given below are a college preparatory, and a general course. The school also provides technical and business courses. For a detailed statement of these latter courses, reference is made to special pamphlets of the technical and business departments.



CORNER OF ELECTRICAL LABORATORY



FREEHAND DRAWING ROOM

# PROGRAM OF STUDIES

## SIX YEAR COURSE

(College)

### *First Form*

English B .....	6*	Science B .....	3
Mathematics B .....	5	Fine Arts B .....	1
French B .....	4	Music B .....	1
History B .....	3		

### *Second Form*

English A .....	5	Science A .....	4
Mathematics A .....	5	Music A .....	1
French A .....	4	Fine Arts A .....	1
Latin A .....	2	History A .....	3

### *Third Form*

English 1 .....	5	Latin 1 .....	5
Mathematics 1 .....	5	History 1 .....	3
French 2 .....	5	Music .....	1

### *Fourth Form*

English 2 .....	5	Latin 2 .....	5
Mathematics 2 .....	5	History 2 .....	3
French 3 .....	3		

### *Fifth Form*

English 3 .....	3	Latin 3 .....	5
Mathematics 3 .....	5	History 3 .....	5
French 4 .....	2	German 1 .....	5

### *Senior Form*

English 4 .....	3	German 2 .....	4
Mathematics 4 .....	5	Chemistry or { .....	5
Latin 4 .....	5	Physics }	

\*Refers to number of hours a week.

This course will prepare a student for any college or technical school.

Graduates of grammar schools are admitted to the third form without examination. Slight changes are made in the subsequent course to conform to their preliminary training.

Courses will be arranged for those who have pursued a partial high school course.



AT THE BENCHES



WOOD TURNING SHOP

# SIX YEAR COURSE

(General)

## First Form

English B .....	8	Fine Arts B .....	1
Mathematics B .....	5	Music B .....	1
History B .....	3	Woodworking .....	2
Science B .....	3		

## Second Form

English A .....	8	Music A .....	1
Mathematics A .....	5	Fine Arts A .....	1
History A .....	3	Woodworking .....	2
Science A .....	4		

## Third Form

### Required Courses

English .....	5	French, German or Latin .....	5
Mathematics .....	5		

### Elective Courses

Latin .....	5	German .....	5
Elementary Science .....	2	Shorthand .....	5
English History .....	5	Freehand Drawing .....	2
Bookkeeping .....	4	Woodworking .....	2
Mechanical Drawing .....	4	Typewriting .....	5
French .....	5		

## Fourth Form

### Required Courses

English .....	5	French, German or Latin .....	5
Mathematics .....	5		

### Elective Courses

Latin .....	5	Spanish .....	5
French .....	5	Ancient History .....	5
German .....	5	Mechanical Drawing .....	4
Machine Drawing .....	5	Bookkeeping .....	4
Electricity .....	2	Freehand Drawing .....	2
Woodworking .....	2		

## Fifth Form

### Required Courses

English .....	3	Mathematics .....	5
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### Elective Courses

Latin .....	5	American History .....	5
French .....	5	Industrial History .....	3
German .....	5	Commercial Law .....	3
Spanish .....	5	Economics .....	3
Physics .....	5	Ancient History .....	5
Chemistry .....	5	Machine Drawing .....	4
Bookkeeping .....	4	Architecture .....	4
Shorthand .....	5	Woodworking .....	4
Typewriting .....	5		
Electricity .....	5		

*Senior Form*  
Required Courses

English ..... 3

Elective Courses

Latin .....	5	Applied Mathematics .....	5
German .....	5	Review Mathematics .....	5
French .....	5	Solid Geometry .....	3
Chemistry .....	5	Trigonometry .....	3
Physics .....	5	Architecture .....	4
Electricity .....	4		
Illustrating and Cartooning ...	4		

This course permits of considerable election. Students who wish a general training select their work from this course.

Graduates of a grammar school are admitted to the third form without examination.

For graduation from the School the applicant

**Requirements for Graduation** must complete the work of the first two forms and in addition sixteen hours of English, fifteen hours of mathematics (algebra and geometry), ten hours of a foreign language, five hours of a science, and five hours of history. The remaining 24 hours of the requirements for graduation may be selected from the elective courses. An opportunity is given, therefore, to select such work as is required by the college for which the applicant is preparing or to take vocational courses should the applicant wish to complete his education with the work of this school.



# Subjects of Instruction

## ENGLISH

**T**HE course in English, planned both for students entering college and for students entering business, is designed to instruct them to speak, to read and to write English with ease, intelligence and taste. Supplementary reading and reports are required of all classes. Frequent consultations for critical discussion of essays are arranged.

**English B.** *Literature.* Hawthorne, "True Stories"; Dickens, "Paul Dombey"; selections from Lamb's "Tales from Shakespeare." *Language and Composition.* Dictation, oral and written reproduction exercises and original compositions, punctuation, spelling, and memorizing of good literature. *Grammar.* Simple, complex, compound sentences, phrase and clause. Recognition and definition of parts of speech. Analysis of sentence.

**English A.** *Literature.* Reading from old Testament; Macaulay, "Lays of Ancient Rome"; Scott, "Lady of the Lake"; Lowell, "Vision of Sir Launfal." *Composition.* Weekly themes, letter writing, spelling, oral expression, memorizing.

**English 1 (5)\*** *Applied Grammar.* Punctuation, Dictation, Letter Writing. Irving's Sketch Book; Scott's Marmion; Longfellow's Courtship of Miles Standish; Macaulay's Lays of Ancient Rome.

**English 2 (5)** *Applied Rhetoric.* Oral Expression. Bunyan's Pilgrim's Progress; Homer's Iliad; Eliot's Silas Marner; Stevenson's Treasure Island; Coleridge's The Ancient Mariner.

**English 3 (3)** *Argumentation, written and oral.* History of English Literature. Addison's Sir Roger de Coverly Papers; Tennyson's Idylls of the King; Shakespeare's Merchant of Venice, Julius Caesar.

**English 4 (3)** *Composition, oral and written.* History of American Literature. Macbeth, Milton's L'Allegro, Il Penseroso and Comus, and Burke's Speech on Conciliation with America; Macaulay's Life of Johnson; Palgrave's Golden Treasury.

\*Numbers refer to hours a week.

## THE MODERN LANGUAGES

The direct language method so successfully expounded in Dr. Worman's language text books is used and students acquire more than an elementary book knowledge. They *use* the foreign languages and cultivate ear and tongue so as to become proficient both in the structure and expression of French, German and Spanish.

### FRENCH

**French B.** Worman's First French Book; Colin's Elementary Lessons. Much conversational work.

**French A.** Worman's First French Book; Colin's Elementary Lessons; Roder's French Sight Reading; Labiche "La Grammaire."

French B and A cover the ground of French I.

**French 1 (5)** Worman's First French Book; Colin's Elementary Lessons or Chardenal's Complete French Course; Roger's French Sight Reading; Labiche, La Grammaire; La Cigale, La Fontaine's Fables.

**French 2 (5)** Worman's Second French Book and his Grammaire; Francois, Elementary French Composition; Labiche, La Poudre aux yeux, Le Voyage de M. Perrichon; Molière, Le Malade imaginaire; Dumas, Les trois Mousquetaires; Taine, La France Contemporaine.

**French 3 (3)** Worman's Grammaire; Lamartine, Révolution Française; Selections from Maupassant, Th. de Banville, Meilhac at Halevy, and others; Koren, French Composition.

**French 4 (2)** Classic plays, and selections from Balzac, and others; Victor Hugo, Hernani; Rostand, Cyrano de Bergerac; critical essays on France, its people and its literature.

### GERMAN

**German 1 (5)** Worman's Complete German Grammar; Worman's First German Book, Gohdes and Buschek, Sprach und Lesebuch; Benedix, Der Prozess, Gruss aus Deutschland.

**German 2 (5)** Worman's German Grammar, Worman's Second Book, Worman's Collegiate Reader. Such reading from modern authors as Volkmann, Kleine Geschichten; Gerstäcker, Germelshausen; Storm, Immensee; Arnold, Fritz auf Ferien; Schiller's Glocke.

**German 3 (3)** Becker, *Deutsch für Ausländer*; Wildenbruch, *Das edle Blut*; Baumbach, *Die Nonne von Liliencron*, Anno 1870; Keller, *Kleider machen Leute*; Heine, *Die Harzreise*; Meyer, *Das Amulet*; German Composition.

**German 4 (2)** Becker, *Deutsch für Ausländer*; Schiller, *Wilhelm Tell* or *Die Jungfrau von Orleans*; Lessing, *Minna von Barnhelm*; Goethe, *Egmont*, *Hermann und Dorothea*, and critical essays on Germany, its people and its literature.

## SPANISH

**Spanish 1 (5)** Worman's *First Spanish Book*; or Marion, *Introducción á la lengua castellana*; Coester, *Spanish Grammar*; Morrison, *Tres Comedias Modernas* and selections from other authors.

**Spanish 2 (5)** Worman's *Second Spanish Book*; Bonilla's *Spanish Daily Life*. The latter part of this course consists in reading and criticising modern literature, with written analyses and conversational exercises, also a practice in reading and writing commercial Spanish, together with a study of the people and history of Spanish speaking countries.

## LATIN

**Latin A (2)** An introductory course to Latin.

**Latin 1 (5)** *Beginners' Latin*. First year Latin lessons complete. Easy Latin prose.

**Latin 2 (5)** *Caesar, Sallust and Latin Composition*. Review of constructions, forms and application of rules of syntax.

**Latin 3 (5)** *Cicero's Orations against Cataline*, for the Manilian Law, for Archias. Grammar. Composition. Translation at sight from Caesar and Sallust.

**Latin 4 (5)** *Virgil's Aeneid*. Translation at sight from Ovid, Sallust and others. Composition.

## HISTORY

**History B.** *United States History* completed.

**History A.** *English History*; Review of United States History; Civics.

**History 1 (3)** Introductory course in *Ancient History*.

**History 2 (5) *Ancient History.*** The ancient world to 800 A.D. Emphasis is placed on the life, literature, art and political, social and religious institutions of the foremost nations as these have influenced modern civilization. College requirements.

**History 3 (5) *United States History.*** Includes enough of English history to enable one to understand American. Emphasis is placed on the careers of eminent men, on civic legislation and on territorial and constitutional expansion. College requirements.

**History 4 (2) *Industrial History.*** The aim is to acquaint the student with the great sea routes and ports, the products transported; the changes produced by wars, steam and electricity in the long period covered by ancient, mediaeval and modern history.

## MATHEMATICS

**Mathematics B.** Review of Fractions. Practical Measurements. Percentage and its applications.

**Mathematics A.** Arithmetic completed. Observational Geometry. Introduction to Algebra.

**Mathematics 1 (5) *Algebra I.*** The essential operations of algebra to quadratics. The emphasis is on the fundamental principles.

**Mathematics 2 (5) *Algebra II.*** Covers the college entrance requirements. Introduction to Geometry during the last three months of the year.

**Mathematics 3 (5) *Plane Geometry.*** The five books. A large number of original exercises. Review of Elementary Algebra.

**Mathematics 4 (2) *Solid Geometry.*** The standard theorems in solid and spherical geometry. Stress is laid upon numerical exercises involving mensuration of solid figures.

**Mathematics 5 (3) *Plane Trigonometry.*** Logarithms. The solution of right and oblique triangles. Goniometry.

**Mathematics 6 (5) *Review of Algebra and Geometry.*** This course covers the requirements of Algebra and Geometry for college entrance.

**Mathematics 7** (5) *Applied Mathematics*. Practical applications of algebra, geometry, physics, trigonometry, logarithms, slide rule and graphs.

**Mathematics 8** (2) *Arithmetic*. A course covering the essentials of practical arithmetic.

## SCIENCE

**Science B.** (a) Review of Elementary Geography. Physical and political geography of United States, other countries of North America, and the countries of Europe. Drill in map drawing and use of outline maps.

(b) *Physiology and Hygiene*. The skin; bones; muscles; exercise; digestion; circulatory system; organs of respiration and speech; excretion; nervous system; special senses; accidents, emergencies, and contagious diseases.

**Science A.** (a) Physical and political geography of countries of South America, the West Indies, Asia, Africa, Australia, Malaysia, and the other islands of the Pacific. Drill in map-drawing and use of outline maps.

(b) *General Science*. Some elementary physical ideas with experiments, elements of Botany, Astronomy, Physiography.

**Science 1** (2) A course in *Elementary Science* dealing with the common things of life. The course is arranged as an introduction to science and is intended to give one a broad and helpful view of the physical sciences.

**Science 2** (5) *Physics*. Recitation and laboratory work covering preparation for college. Constant drill in the solution of problems involving the elementary principles of Physics.

**Science 3** (5) *Inorganic Chemistry* covering the work of preparation for college; recitations, lectures, demonstrations and laboratory work. Independent work, observation and reasoning are insisted upon.

## COMMERCIAL STUDIES

**Commerce 1** (5) *Penmanship*. Spelling and business papers.

**Commerce 2** (3) *Commercial Arithmetic* and rapid calculation.

**Commerce 3** (2) *Commercial Geography*. The products of leading nations; soil and climate; commercial relations;

transportation. Emphasis placed on the commercial geography of New England States.

**Commerce 4 (5) *Bookkeeping.*** Single and double entry bookkeeping.

**Commerce 5 (5) *Shorthand.*** Principles of Ben Pitman Shorthand. Practice in writing and reading. Shorthand dictation and transcription of notes. Office practice.

**Commerce 6 (5) *Typewriting.*** The touch method of typewriting; carbon copying, filing, mimeographing, dictation, tabulating, office practice.

**Commerce 7 (2) *Economics.*** Elements of Economics.

**Commerce 8 (2) *Industrial History.*** Social economic and industrial history of the United States.

**Commerce 9 (3) *Business English.*** Numerous forms of letters and business forms. Emphasis is placed on punctuation, details of construction, capitalization and choice of words.

**Commerce 10 (2) *Commercial Law.*** A course covering the elements of business law.

## MANUAL ARTS

**Wood-Working (4)** Bench work in wood with tools, from drawings made by the student.

**Wood-turning (4)** and general speed lathe work from standard designs; patternmaking.

## MECHANICAL DRAWING

**Mechanical Drawing 1 (4)** Use of drawing instruments, T square, triangles, etc. Simple projections, nuts and screws, oblique, projections, penetration of solids, simple gearing.

**Mechanical Drawing 2 (4) *Machine Drawing.*** The aim of this course is to teach the proper way of making the necessary dimensioned drawings for use in practice. The instruction includes: (1) the making of sketches of the parts of the machine from measurements. (2) The detail scale drawing from the sketches and a tracing. (3) An assembly drawing of the machine.

## ELECTRICITY

**Electricity 1 (2)** The subjects taught in this course are broadly covered by the general titles; wiring methods, batteries, bells and annunciators, spark coils and ignition devices.

**Electricity 2 (4)** Among the subjects considered: dynamo machinery, direct current motors, distribution of power, electric lighting, etc.

**Electricity 3 (4)** Elements of alternating currents, alternators, transformers, motors, conversion of A. C. to D. C. electrical measurements, etc.

### **BIBLE INSTRUCTION**

Bible instruction is offered once a week. Attendance is required of every boy. The School is non-sectarian. No attempt, therefore, is made to bias the student, the only objects being to inspire respect for the teachings of the Bible, and to familiarize the student with its contents.

### **MUSIC**

The school has on its faculty a skilled teacher of music who has charge of the chorus and the general musical features of the School. Pupils in the 6th year of the Lower School and the first three years of the Higher School receive systematic class instruction in the elements of music. The entire school meets once a week for choral work.

## Vocational Guidance

THE aim of Huntington School is (1) to enable the student who will continue his education beyond the secondary school stage to select intelligently and as early as possible the vocation or profession in which his interests, natural aptitudes and abilities will enable him to be most successful, and to advise the best means of preparing for it; (2) to advise the student who does not expect to enter a higher institution of learning of the fields of work best suited to his limited training, his special ability and inclinations, and to provide suitable courses for a number of such vocations.

The graduate or attendant at any school or college, upon seeking employment, is asked by a cold, critical world, two clean-cut, searching questions which must be answered: namely, "What can you do, and how well can you do it?" It is the answer which determines one's opportunities, standing in society, income, comforts and fullness of life.

It should be the business of schools to so advise and so plan the work of its students so that when they have completed the course of study in a secondary school, a college, or technical school, that they will be able to answer these questions satisfactorily.

At Huntington no attempt is made to decide for the student what occupation he should choose but every effort is made to help him come to true conclusions for himself. Information, inspiration and co-operation is the motto.



# Huntington Summer School

The summer session of the Huntington School opens June 21st, 1915, and continues for twelve weeks. The aim of the school is to provide tutoring and class instruction for those who are conditioned in grammar school, high school, and college subjects, for those who wish to complete a four year high school course in three years, and for those who wish to prepare for the entrance examinations to Harvard, Massachusetts Institute of Technology and the other New England colleges.

All of the courses usually offered for admission to college are scheduled.

The teaching force is made up of men of the regular school faculty, who have had a large experience in preparing students.

The school has been successful in preparing for examinations. During the summer of 1914 one or more boys entered each of the following schools: Harvard, Yale, Dartmouth, Boston University, Tufts, Massachusetts Institute of Technology and Massachusetts Agricultural College.

The courses are so conducted that much individual instruction is given. It is possible, therefore, to accomplish a great deal during the session. At the opening of the term, the student announces his plans and every effort is made to have him realize them.

The tuition rate is \$50; \$30. payable upon entering, and the balance at the beginning of the sixth week.

Books are rented by the school to those who make a deposit of \$5. Four dollars of the deposit is refunded when the books are returned.

A special circular of the school will be forwarded upon request.

## Summer Camps

The Headmaster is in touch with a number of summer camps, located both inland and on the coast where a large number of our students spend their summers. Information about them will be gladly given.

## Financial

The rates of tuition of the Huntington School are lower than those of other good private schools. This is made possible through the liberal endowment in buildings and equipment:

Preparatory Year	\$150.
Upper School	
Forms 1, 2	\$175.
Forms 3, 4, 5, Senior	\$200.
Business Department	\$175.
One Year Technical Course	\$125.
Architectural Drawing	\$75.
Machine Drawing	\$75.

For special courses rates will be quoted on application.

The tuition fees are payable in advance, three-fifths at the time of entrance and two-fifths on or before February 1st. Students entering before November 15 are charged from the beginning of the school year.

Members of the School previous to the year 1915 pay the tuition which was in force when they entered upon their course providing they have been in continuous attendance and register before July 1st.

The tuition fee includes, besides instruction, membership in the Y. M. C. A., gymnasium and swimming pool privileges.

**Books** Books will be furnished free of charge to members of the School prior to the school year 1914-1915. After the school year 1915-16 neither books nor supplies will be furnished free of charge to any students.

**Registration Fee** A registration fee of \$5. is due from all new students when a place is reserved. It is a part of the tuition and will be credited on the first payment. When once paid it will not be refunded. To insure a place in the school registration should be made before September 1st.

When an applicant enrolls in the school, it is understood unless otherwise specified, that he enrolls for the entire year and is liable for the tuition for that period. No refund is made for a period less than a half year, excepting in case of illness.

**Manual Training** Students who take manual training are charged with the material used when the articles made are removed from the department.

**Huntington General Association Fee** *All students pay a fee of \$5.* This secures membership in the Huntington General Association and provides the funds for the major social and athletic activities of the school.

**Graduation** All students graduated from the School are charged \$5. which covers the cost of the diploma and expenses incidental to graduation.

**Payments** Make all checks payable to the Boston Young Men's Christian Association.

# School Organizations

## THE ATHLETIC ASSOCIATION

ROBERT E. JACKSON

*President*

ARTHUR RICO

*Vice-President*

CHARLES M. ZIEGLER

*Secretary*

## THE ATHLETIC COUNCIL

I. A. FLINNER

*Headmaster, ex-officio*

A. W. HALE

*Chairman and Faculty Adviser, and Faculty Manager of Crew*

A. B. KING

*Faculty Manager of Football*

W. M. SHIPMAN

*Faculty Manager of Track*

H. I. WILLIAMS

*Faculty Manager of Baseball*

JAMES A. BELL, JR.

*Faculty Manager of Tennis*

C. H. SAMPSON

*Faculty Manager of Swimming*

WILLIAM L. ESTERBERG

*Faculty Manager of Hockey*

ROBERT E. JACKSON

*Pres. Athletic Assn.*

ARTHUR RICO

*Vice-Pres. Athletic Assn.*

CHARLES M. ZIEGLER

*Secy. Athletic Assn., and Captain of the Track Team*

ROBERT COWEN

*Captain of Football Team*

JOHN F. FITZGERALD, JR.

*Captain of the Swimming Team*

M. R. ROACH

*Captain of the Hockey Team*

ARTHUR LUNDQUIST

*Captain of the Crew*

GUY V. GOODRICH

*Captain of the Baseball Team*

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## SCHOOL YEAR 1914-1915 ATHLETIC TEAMS

<i>Sport</i>	<i>Captain</i>	<i>Student Manager</i>	<i>Faculty Manager</i>
Football	Robert Cowen	Norwood Webster	A. B. King
Track	Charles M. Ziegler	Edmund F. Jewell	W. M. Shipman
Swimming	J. F. Fitzgerald, Jr.	H. F. Ogden	C. H. Sampson
Hockey	M. R. Roach	C. S. Jones	W. L. Esterberg
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 IRWIN, GEORGE CLAYTON  
 JACKSON, RICHARD PERCY, JR.  
 JACKSON, ROBERT E.  
 JAMES, MORRISON CUTLER  
 JANES, HAROLD BIXBY  
 JAQUES, PAUL ALEXIS  
 JEFFERSON, ERNEST ROGERS  
 JEWELL, EDMUND FRANCIS  
 JOHNSON, HOWARD CHESTER  
 JOHNSON, NEAL OSCAR  
 JONES, CERENO ST. CLAIR  
 JONES, SAMUEL FINLEY, JR.

Hartford, Conn.  
 Beverly  
 Brookline  
 Brookline  
 Medford  
 Lexington  
 Shinnston, W. Va.  
 Boston  
 So. Boston  
 Allston  
 Dorchester  
 Everett  
 Cambridge  
 Georgetown  
 Dorchester  
 Marblehead  
 Marblehead  
 Charlestown  
 Wollaston  
 Cambridge  
 Winthrop  
 Reading  
 Waltham  
 Waltham  
 Boston  
 Beverly  
 Woburn  
 Jamaica Plain  
 Boston  
 Hingham  
 Watertown  
 Haverhill  
 W. Somerville  
 Jamaica Plain  
 Brighton  
 Dorchester  
 Watertown  
 Wakefield  
 Chelsea  
 Waltham  
 Randolph  
 Marlboro  
 Allston  
 W. Medford  
 Wakefield  
 Dorchester  
 Newtonville

JOW, YUE SUN  
 KEIVER, OSMUND OLDFIELD  
 KIGGEN, THOMAS EWEN  
 KIMBALL, ARTHUR REGINALD  
 KIMBALL, FREDERICK SHERMAN  
 KIMSEY, CARL CLEVELAND  
 KING, RAYMOND S.  
 KINGMAN, WINSLOW MORRISON  
 KOHLER, JOHN HENRY  
 KOSHLAND, STEPHEN ABRAHAM  
 KRONE, LESTER F.  
 LANE, FREDERICK CONULUS  
 LAWRENCE, ARTHUR MACDOUGALL  
 LAWRENCE, J. MARSHALL  
 LAWRENCE, WILLIAM EWART  
 LEATHERBEE, WILLIAM BRADFORD  
 LECLAIR, HENRY LEIGH  
 LEE, PAY  
 LEE, SAM  
 LEONARD, WALTER G.  
 LIBBY, GEORGE MUNROE  
 LIDDELL, JAMES AUSTIN  
 LITTLE, NORMAN ELLSWORTH, Jr.  
 LIVINGSTONE, FRANCIS A.  
 LORD, EDWIN AUGUSTUS  
 LUNDQUIST, ARTHUR  
 McCARTER, KENNETH THAYER  
 McCULLOCH, LAURENCE  
 MACDONALD, SUMNER BIGELOW  
 MACDOUGALL, JOHN STORER  
 McLEOD, ALEXANDER BYRON, Jr.  
 McLEOD, ROBERT CROFTON  
 McLEOD, ROBERT RANDALL  
 McNULTY, JAMES HENRY, Jr.  
 MALIFF, WILLIAM FRANCIS  
 MANNING, WARREN HAROLD  
 MANSON, WARREN HUBERT  
 MARLING, WENTWORTH, JOHNSON  
 MARSHALL, WILLIAM BARTLETT  
 MAYO, GEORGE SAMUEL  
 MEHAFFEY, GRAHAM TYLER  
 MERRICK, ROBERT JONES  
 MERVIS, DAVID  
 MILLIGAN, RANDOLPH HALL  
 MONK, NEWTON  
 MOONEY, ARTHUR EDWARD  
 MOORE, CHARLES DWIGHT

Boston  
 Brighton  
 Hyde Park  
 Hingham  
 Haverhill  
 Sparta, Tenn.  
 Peabody  
 W. Somerville  
 Boston  
 Boston  
 Roxbury Crossing  
 Revere  
 Jamaica Plain  
 Lawrence  
 Forest Hills  
 W. Roxbury  
 Boston  
 Boston  
 Boston  
 Mansfield  
 Winchester  
 Newton Centre  
 Hingham  
 Malden  
 Brookline  
 Dorchester  
 Braintree  
 Ashmont  
 Gloucester  
 Haverhill  
 Mattapan  
 Winthrop  
 Mattapan  
 Chelsea  
 So. Boston  
 Brookline  
 Walpole  
 Beverly  
 Jamaica Plain  
 E. Milton  
 Brookline  
 Stoughton  
 Boston  
 Cambridge  
 Stoughton  
 Reading  
 Arlington

MORANG, LLOYD CLAYTON	W. Somerville
MORRILL, ORVILLE LAMONT	Boston
MULLIN, CHARLES KING	Wollaston
MUNROE, RUSSELL FELTON	Marblehead
MURPHY, DUDLEY BOWLES	Winchester
NEWHALL, WILLIAM GORDON	Newton
NICHOLS, CHARLES CLARENCE	Jamaica Plain
NICKERSON, NORTON ATWOOD	Yarmouth
NORTON, MYRON EDWARD	Melrose Hlds.
NYE, RAYNOR BASSETT	Whitman
NYMAN, DANIEL EUGENE	Melrose Hlds.
O'CONNELL, THOMAS ANDREW	Boston
O'CONNOR, ARTHUR MAXWELL	Revere
O'CONNOR, DANIEL JOSEPH	E. Boston
OGDEN, HAROLD FRANKLIN	Winchester
OGDEN, KARL BRUCE	Winchester
O'HARA, EZRA FITCH	Waltham
O'HARA, SKIDMORE	Waltham
ORCUTT, J. WESLEY	Dorchester
OSGOOD, CARLETON G.	Melrose
PACKARD, WALTER SCOTT	Boston
PARKER, ALBERT DINNIE	Quincy
PARKER, ALBERT NELSON	Malden
PATCH, EDWIN ORLANDO	Concord Jct.
PEARCE, FRANCIS CLIFF	Wollaston
PECKERMAN, EDWARD RICHARD, Jr.	Boston
PEDERSEN, NICHOL ANDREW	Beverly
PEREZ, JOSE	Santurce, Porto Rico
PERKINS, WILBUR HARFORD	Utica, N. Y.
PETERS, GEORGE ALFRED	W. Roxbury
PETERS, GRANT B. H.	Brookline
PHILBRICK, EVERETT GERRISH	Melrose Hlds.
PHILBROOK, WILLIAM KETTELL	Charlestown
PHILLIPS, ROBERT	Brookline
PIERCE, CARL HILTON	W. Somerville
PIERCE, FREDERICK HASTINGS	Cambridge
PILLSBURY, FRANKLIN CALHOUN, Jr.	Boston
POWDERLY, WILLIAM HENRY, Jr.	Roxbury
POWERS, HAVEN MERRILL	Brookline
PRATT, WALTER H.	Natick
PREBENSEN, HAROLD INGWALD	Somerville
PRESTON, BURNHAM GODDU	Winchester
PRICE, DANIEL OTIS	Melrose
PRIVAS, HYMAN S.	E. Boston
PROBERT, WALTER HANDFORD	Norwood
PURINTON, ARTHUR E.	Bowdoinham, Me.
QUAN, VICTOR	Forest Hills

QUINN, DAVID HAROLD	Boston
RATHJE, GEORGE GUSTAVE	Boston
REYES, ANTONIO	Havana, Cuba
RICHARDSON, THEODORE	Malden
RICO, ARTHUR RAYMOND	Dorchester
ROACH, MICHAEL R.	Boston
ROBART, FRANCIS HAROLD	Boston
ROBINSON, GEORGE WARREN	Brookline
ROJAS, NICHOLAS	Sucre, Bolivia
ROMAN, JOHN BAPTISTE	Charlestown
RUSSELL, CLARENCE WILSON	Winchester
SAMPSON, GEORGE AUSTIN	Allston
SANBORN, REGINALD WARE	Spencer
SANDLER, JOHN	Lowell
SAUNDERS, AMBROSE RANALD	West Medway
SAYWARD, WILLIAM SEWALL, Jr.	Wollaston
SCHRIEFNER, F. H.	Newton Centre
SCHULT, WILHELM FRITIOFF	Newtonville
SCHULZ, ROBERT WM. SCHRAFFT	Dedham
SCOTT, STUART NASH	Boston
SEAVER, JOHN GILMORE	Woburn
SHANNON, CHARLES W.	Chelsea
SHAW, ROBERT M.	Brookline
SHEPARD, WINTHROP RUSSELL	Dorchester
SKINNER, ROBERT ARTHUR	Wakefield
SMALL, NORMAN ALDRICH	Cambridge
SMITH, CARL RANSON	Dorchester
SMITH, CHARLES WESLEY	Cambridge
SMITH, HENRY KNOWLTON	Middletown, O.
SMITH, MINOT F., Jr.	W. Roxbury
SMITH, SHIRLEY LEWIS	Roslindale
SMITH, WILLARD FRANCIS	Dover
SMITH, WILLIAM EUSTIS	Boston
SOUSA, ANTONIO DE	Brazil, S. A.
SOUTHWORTH, ARTHUR PALMER	Wakefield
SPOONER, WALLACE KELLOGG	Sherman Mills, Me.
STAIT, FREDERICK HAROLD KEITH	Newton Centre
STARBUCK, ROBERT BARKLEY	Cambridge
STEADMAN, ELMER WOODBURY	Roxbury
STEARNS, RALPH SARGENT	Manchester
STERLING, GEORGE WINFIELD	Melrose
STEWART, HAROLD ARTHUR	Dorchester
STICKEL, PAUL JELLY	Lexington
STONE, ROBERT GILMOUR	Wollaston
SULLIVAN, WILLIAM DOOGNE	Roxbury
SWANSON, BARTEL FRANKLIN	Arlington Hts.
TAFT, LORADO EDSON	Gloucester

THALIN, ROBERT WILLIAM  
 THIEL, FRANK ARTHUR  
 TODD, CHARLES RUSSELL  
 TOOMEY, WILLIAM DANIEL  
 TORGERSON, FRITZOFF OSCAR  
 TORREY, RALPH CROCKETT  
 TRENCH, DAVID SYDNEY  
 TYLER, NORMAN EDWIN  
 TYLER, PHILIP PALMER  
 VERDER, WALTER MONTGOMERY  
 VOKES, ARCHIBALD HARRY  
 VON BERG, WILLIAM ERNEST  
 WARD, HUBBARD BEACH  
 WARDE, WILFRED B.  
 WARDLE, WILLIAM HEATH  
 WARNER, JOHN LUTHER  
 WARNER, LEIGH  
 WEBSTER, NORWOOD  
 WESTWOOD, RICHARD WILBUR  
 WHITMAN, FRED ERNEST  
 WILSON, LESLIE JORDON  
 WOLF, BERNARD M., JR.  
 WOLF, J. ROBERT  
 WOOD, ABEL FARNSWORTH  
 WOOD, GORDON  
 WRIGHT, JOHN LAWRENCE  
 WRIGHT, WARREN WELLS  
 ZIEGLER, CHARLES M.

Roslindale  
 Canton  
 Dorchester  
 E. Boston  
 Roxbury  
 Wellesley Hills  
 Somerville  
 Roxbury  
 Brighton  
 Dorchester  
 Boston  
 Neponset  
 Brookline  
 Brookline  
 Dedham  
 Boston  
 Boston  
 Boston  
 Newton  
 W. Medford  
 Medfield  
 Boston  
 Boston  
 Dorchester  
 Dorchester  
 Salem  
 Dorchester  
 Boston

# Alumni

## CLASS OF 1912

FARHI, JOSEPH  
NEWCOMB, GARFIELD  
ODIOINE, KENNETH W.

Dorchester  
Malden  
Wakefield

## CLASS OF 1913

ABBOTT, W. LEE  
BAKER, ALFRED W.  
BISHOP, GEORGE, Jr.  
BLOOD, ROBERT  
CARTWRIGHT, PAUL  
DICKSON, ARTHUR D.  
FITCH, ROYAL E.  
FORD, THOMAS H.  
LANDERSON, JOHN  
LARSON, FRED  
MACKILLOP, SAMUEL  
MARSILIOUS, NEWMAN M.  
NILES, THORNTON F.  
QUALEY, JAMES E.  
SMITH, RUSSELL B.  
SPEARS, EVERETT  
STEELE, ALFRED  
TAYLOR, HAROLD  
WATSON, FRED A.  
WEST, FREDERICK

Dorchester  
Allston  
Milton  
Cambridge  
Wakefield  
Cambridge  
Somerville  
Medford  
Roxbury  
Everett  
Dorchester  
Beverly  
Weymouth  
Braintree  
Roxbury  
Roxbury  
Gloucester  
Waltham  
Dorchester  
Jamaica Plain

## CLASS OF 1914

BEEBE, JOHN HARTSHORNE, Jr.  
BELONGA, BENJAMIN QUINT  
BISHOP, HARRY DUNCAN  
BORUCHOFF, HENRY  
CARTLAND, WILLIAM HARVEY  
CHAMBERLAIN, NEWELL BURNAP  
CURRIE, WARREN GILBERT  
CUTTER, HIRAM EDWIN  
ELDREDGE, ADDISON ELWELL  
FARRINGTON, ARTHUR E.  
FINELLI, JOHN  
GODDU, PAUL DUDLEY  
HIGGINS, ERNEST RUSSELL  
IOVANNA, NICHOLAS

Wakefield  
Cliftondale  
Milton  
Malden  
Wakefield  
Cambridge  
Cambridge  
Roslindale  
North Abington  
Roxbury  
Newton  
Winchester  
Milton  
Revere



JACKSON, ROBERT E.  
 LAMSON, HAZEN FRANCIS  
 LANGILL, HENRY PRAY  
 MACDONALD, WILLIAM FRANCIS  
 MANNY, CARLOS CONSTANTINE  
 MILLER, ALAN  
 MORSE, GILEAD D.  
 NYE, RAYNOR BASSETT  
 PARRETT, CHAUNCEY GILDERSLEEVE  
 SALT, GEORGE EGERTON  
 SKINNER, ROBERT ARTHUR  
 SMITH, RODERICK B.  
 TAYLOR, ANDREW WILLIAM  
 TULLY, FREDERICK JOSEPH  
 TUTTLE, WILLIAM  
 WEBSTER, NORWOOD  
 WERMUTH, EUGENE FRANCIS  
 WHEELER, RALPH LORING  
 WILKINS, HERBERT I.

Wakefield  
 Lowell  
 Holliston  
 Medford  
 Boston  
 Gloucester  
 W. Medford  
 Whitman  
 Boston  
 Arlington  
 Wakefield  
 Allston  
 Beverly  
 Milford  
 Mansfield  
 Boston  
 Boston  
 Sharon  
 Wakefield

# 1915

AUBREY PAYSON AMES  
 CHARLES EVERETT BAUCH  
 GEORGE LOCKHART BAUM  
 WHITWORTH FONTAINE BIRD  
 ROBERT IVAN BRADLEY  
 CLIFFORD GORDON BURNHAM  
 ROBERT AUSTIN BLAKE  
 STANLEY EARL COLLINSON  
 RAPHAEL DUNHAM COLLIER COOPER  
 ALBERT STANLEY CUSHING  
 RALPH CURTIS CUTTING  
 BRADLEY STEVENS DAWES  
 REGINALD WHITNEY EDMONDS  
 JOHN TELFORD ELLIOTT  
 THOMAS LAWRENCE FREEMAN  
 LLOYD EDWARD GOLDSMITH  
 FORREST EGGLESTON HODGES  
 HAROLD HOVEY HOLLIDAY  
 HAROLD BIXBY JANES  
 CERENO ST. CLAIRE JONES  
 WALTER GOULD LEONARD

ARTHUR LUNDQUIST  
 WARREN HAROLD MANNING  
 WARREN HUBERT MANSON  
 LAURENCE McCULLOCH  
 NEWTON MONK  
 SKIDMORE O'HARA  
 GRANT BRUNO HUGO PETERS  
 WALTER HENRY PRATT  
 WALTER HANDFORD PROBERT  
 GEORGE WARREN ROBINSON  
 GEORGE AUSTIN SAMPSON  
 CHARLES WILLIAM SHANNON  
 MINOT FULLERTON SMITH  
 WILLARD FRANCIS SMITH  
 ROBERT BARKLEY STARBUCK  
 HAROLD ARTHUR STEWART  
 PHILIP PALMER TYLER  
 WALTER MONTGOMERY VERDER  
 RICHARD WILBUR WESTWOOD  
 CHARLES MELVIN ZIEGLER

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THE  
HUNTINGTON  
SCHOOL  
FOR BOYS

1915-1916

*Technical Department*

Boston Young Men's Christian Association  
316 Huntington Avenue  
1915

*FRANK P. SPEARE, M.H., Director*

*IRA A. FLINNER, A.B., Headmaster*

*CHARLES H. SAMPSON, S.B., Head of Technical Department*

# Technical Department

## FOREWORD

THE development of engineering and scientific industries has created a field of service that makes a strong appeal to young men possessing natural mechanical and scientific ability. Those wishing to follow a calling of this sort must bring themselves to realize, however, that technical training is necessary if they anticipate advancement into responsible positions of a mechanical nature.

The Technical Department of the Huntington School offers to worthy and ambitious young men the opportunity to obtain instruction along technical lines. All the courses are practical and complete, and are planned with the fixed purpose to prepare students to fill technical positions intelligently.

Grammar school graduates and others giving satisfactory proof of the equivalent of a grammar school training are eligible for admittance. Good character, good health and a genuine interest in the subjects to be pursued are necessary for the best success in the work. It is assumed that applicants for admission shall possess these qualifications.

## TUITION

The rate of tuition is given as a separate item under the description of each course.

The school year of 1915-16 opens Sept. 21. Students are expected to register before Sept. 1.

## TECHNICAL COURSE

The Technical Course of the Huntington School makes a strong appeal to the grammar school graduate and to the student who, having attended high school one or two years, has no prospect of attending an institution of college grade. The course aims to prepare students for positions of draftsmen, engineers' assistants, and positions in places connected with designing, manufacture, and construction of machinery.



PHYSICS LECTURE ROOM



PHYSICS LABORATORY



This course is not in any sense of the word a "trade" course, but includes all the applied work of a high school course and much that is given in the first two years of a technical school of college grade.

The work covered during the three years is given below:

<i>First Year</i>		<i>Second Year</i>	
Algebra I . . . . .	5 hrs.	Algebra II . . . . .	5 hrs.
English I . . . . .	5 "	English II . . . . .	5 "
Arithmetic . . . . .	3 "	Plane Geometry . . . . .	5 "
Elementary Science . . . . .	2 "	Industrial History . . . . .	3 "
Freehand Drawing . . . . .	2-1 "	Drafting . . . . .	6-3 "
Drafting . . . . .	8-4 "	Pattern Making . . . . .	4-2 "
Woodworking . . . . .	4-2 "		
<hr/>		<hr/>	
Total . . . . .	22 hrs.	Total . . . . .	23 hrs.
<i>Third Year</i>			
Applied Mathematics . . . . .	5 hrs.		
English III . . . . .	3 "		
Mechanics . . . . .	3 "		
Materials . . . . .	3 "		
Drafting . . . . .	6-3 "		
Trigonometry . . . . .	2 "		
<hr/>		<hr/>	
Total . . . . .	19 hrs.		

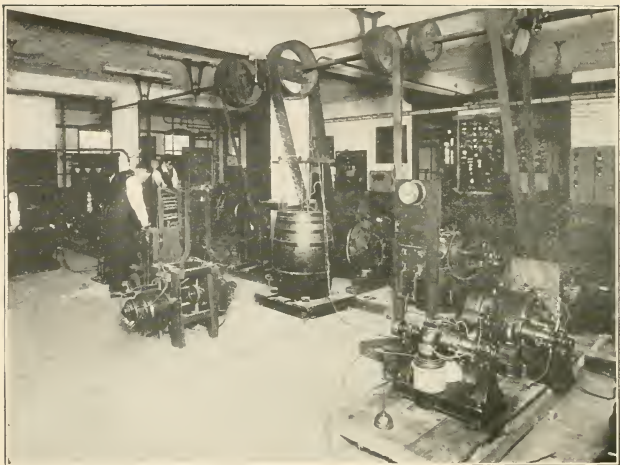
The tuition is \$200 a year, three fifths payable at the opening of school and two fifths on or before February 1.

## ELECTRICAL COURSE

The Electrical course of the Huntington School appeals to the Grammar school graduate who does not expect to enter college. The course is planned to give the student, in addition to instruction in Electricity, such subjects that are closely related to it and are valuable in laying a broad foundation. Graduates have no difficulty in filling such positions as draftsmen, engineers' assistants, switchboard operators, testers, and similar positions demanding a knowledge of the principles of electricity.

The following schedule is adhered to:

<i>First Year</i>		<i>Second Year</i>	
Algebra I . . . . .	5 hrs.	Algebra II . . . . .	5 hrs.
English I . . . . .	5 "	English II . . . . .	5 "
Arithmetic . . . . .	3 "	Plane Geometry . . . . .	5 "
Elementary Science . . . . .	2 "	Electricity . . . . .	3 "
Electricity . . . . .	3 "	Drafting . . . . .	4-2 "
Drafting . . . . .	6-3 "	Electrical Laboratory . . . . .	4-2 "
Pattern Making . . . . .	4-2 "		
<hr/>		<hr/>	
Total . . . . .	23 hrs.	Total . . . . .	22 hrs.



CORNER OF ELECTRICAL LABORATORY



CHEMISTRY LABORATORY  
(One of Three)

### *Third Year*

Applied Mathematics	5 hrs
English III	5 "
Electricity	3 "
Drafting	4-2 "
Mechanics	3 "
Materials	3 "
Trigonometry	2 "

Total . . . . . 23 hrs.

The tuition rate is \$200 a year, three fifths payable at the beginning of first term and two fifths on or before February 1.

## ARCHITECTURAL COURSE

The study of architecture involves not only a knowledge of scientific principles, but also requires a thorough artistic training. The course in architecture as outlined below covers in a most complete way the general requirements of the profession. A large amount of time is devoted to the elements of mechanical drawing; much attention is given to freehand drawing and its practical application; all of the principles of isometric and perspective are thoroughly covered, thus insuring, during the first year, a solid foundation for the actual architectural work to follow.

Among the subjects covered in the drafting part of the course are: Details of Building Construction, Details of Classic Mouldings, the orders of Architecture, Architectural Design, Planning, Building Materials and Specifications, Shading and Rendering in Pen and Ink, Water Color, History of Architecture, and History of Ornament.

Lectures on architectural subjects are given weekly; trips are frequently taken to examine buildings under construction; and considerable time is spent in the Museum of Fine Arts, as a supplement to the work in Design.

An idea of the other subjects covered, in addition to the drawing, may be obtained by an examination of the following schedule:

### *First Year*

Algebra I	5 hrs
English I	5 "
Arithmetic	3 "
Elementary Science	2 "
Freehand Drawing	4-2 "
Drafting	6-3 "
Woodworking	2-1 "

Total . . . . . 21 hrs.

### *Second Year*

Algebra II	5 hrs.
English II	5 "
Plane Geometry	5 "
Industrial History	3 "
Architectural Drafting	6-3 "
Freehand Drawing	2-1 "

Total . . . . . 22 hrs.



FREEHAND DRAWING ROOM



DRAFTING ROOM

*Third Year*

Applied Mathematics . . .	5 hrs.
English III . . . . .	5 “
Mechanics . . . . .	3 “
Materials . . . . .	3 “
Architectural Drafting .	15-7 $\frac{1}{2}$ “

Total . . . . . 23 $\frac{1}{2}$  hrs.

The tuition rate is \$200 a year, three fifths payable at the beginning of the first term and two fifths on or before February 1.

## ONE YEAR TECHNICAL COURSE FOR HIGH SCHOOL GRADUATES

This is an excellent course for the High School graduate who, upon graduation, finds himself fitted for no definite vocation, and for the graduate who had intended to enter college but finds it impossible at the last moment. The course is open only to those who have completed a high school course or its equivalent.

The following subjects are pursued:

Applied Mathematics	5 hours per week
Mechanics	3 “ “
Materials	3 “ “
Drafting	15 “ “

The work in Applied Mathematics treats of the principles of arithmetic, algebra, plane and solid geometry, trigonometry, and the application of these principles to the solution of practical problems.

The study of Mechanics covers, as pursued here, the following branches of the subject: concurrent forces, parallel forces, center of gravity, motion, inertia and rotation. It is a most interesting, practical, and valuable course.

The course in Materials involves the compilation of a hand book of data which is useful to one entering engineering work.

In the course in Drafting, all essentials are thoroughly covered. The course is extensive and is conducted, as nearly as possible, along practical lines. Students completing this course have invariably “made good” in positions taken.

The tuition rate is \$125 for the course, three fifths payable at the beginning of the first term and two fifths on or before February 1.



AT THE BENCHES



WOOD TURNING SHOP

## ARCHITECTURAL DRAFTING COURSE

This is a course of two years' duration which has for its purpose the fitting of young men to become proficient architectural draftsmen. Applicants for the course should possess, in order to insure the best success, a working knowledge of the principles of arithmetic, elementary algebra, and plane geometry. The knowledge of geometrical construction is especially important.

The course, including about one hundred plates, covers, in a most complete manner, the following subjects:

- Lettering
- Orthographic Projection
- Development and Intersection of Surfaces
- Freehand Drawing
- Tracing
- Blueprinting
- Details of Building Construction
- Details of Classic Mouldings
- The Orders of Architecture
- Architectural Design
- Planning
- Building Materials and Specifications
- Shading and Rendering in Pen and Ink
- Water Color
- History of Architecture
- History of Ornament

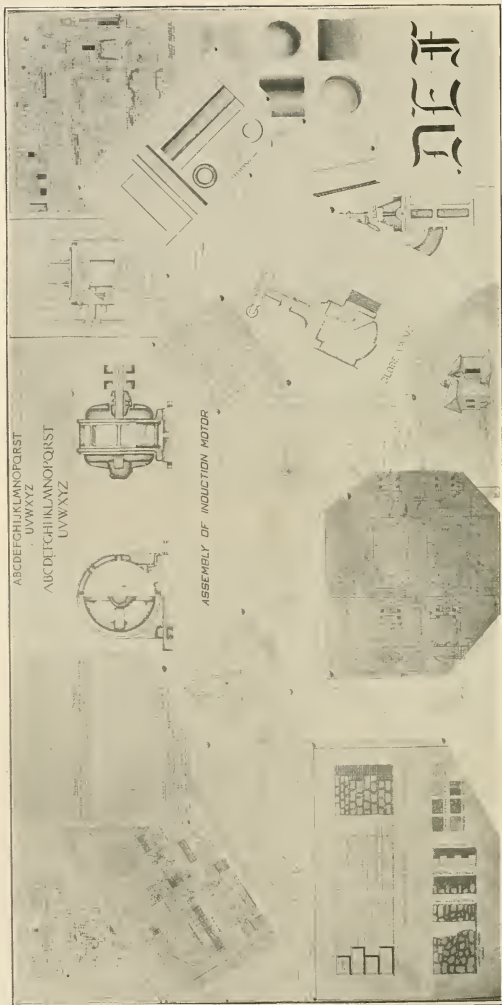
The tuition rate is \$75 a year, \$40 payable at the beginning of the first term and \$35 on or before February 1.

## MACHINE DRAFTING COURSE

This course in Machine Drafting, extending over one year, is designed for those who desire to fit themselves to occupy positions as draftsmen; for those who wish to obtain a knowledge of the subject for the purpose of reading blue prints; for those who contemplate becoming teachers of the subject; and for those who find a knowledge of drafting a necessary or valuable asset in the work in which they are engaged.

The instruction covers, in a very complete manner, all the fundamentals; such as, lettering, orthographic projection, developments, and intersections of surfaces. Details of machine parts and assembly drawings are made in sufficient number to insure a proper understanding of methods in common use. Much time is given to sketching machines and to making assembly drawings from the sketches. Many drawings are





DRAWINGS MADE BY STUDENTS IN THE ELECTRICAL AND MECHANICAL COURSES



inked and traced. Everything is completed in a manner, as nearly as possible, like that required by the demands of actual drafting room practice. In addition to the regular course, considerable instruction is given on isometric projection, perspective, and elementary machine design.

The tuition rate is \$75 for the course, \$40 payable at the beginning of the first term, and \$35 on or before February 1.

### **TEACHERS' COURSE**

The Technical Department offers each year, to a limited number of young men, the opportunity to train for future positions as teachers of Manual Training and Mechanical Drawing. To young men, engaged in the trades, this chance for advancement should at once appeal. The Huntington School is especially well equipped to offer a course for the training of tradesmen to become teachers. The equipment is modern and complete; the instructors, practical men; the courses, designed to cover in a most practical way everything demanded from industrial instructors.

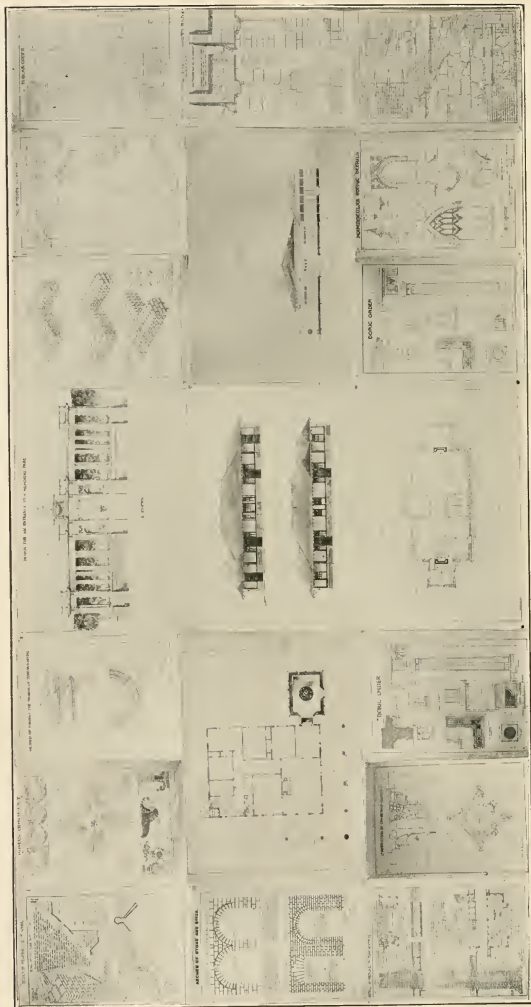
The course in Mechanical Drawing deals not only with the elementary problems, but also includes instruction in freehand and machine drawing, much attention being given to isometric projection, perspective, cam and gear design and many other details not usually found in the course generally given in training schools. The work in Manual Training covers complete instruction in bench work, wood turning, pattern making and moulding.

Every student enrolled will be given an opportunity to assist in instruction just as soon as he is competent to do so. This practical experience will mean much to the young teacher.

The rate of tuition is \$125, \$75 payable at the beginning of the term and \$50 on February 1.

### **VOCATION AND PLACEMENT DEPARTMENT**

It is a fact that very little assistance is ordinarily given in aiding boys and young men to select vocations suited to their requirements. They are permitted to grope about, trying this kind of work and that, until at last they settle upon some line which may or may not be adapted to them. Such hit-or-



DRAWINGS MADE BY STUDENTS IN THE ARCHITECTURAL COURSES

miss methods often end in their entering the so-called blind-alley occupations. This happens frequently because the immediate returns are usually greater than those from callings which require a liberal training, and in which one can, after several years, rise to a good position.

Every effort is made by the school to assist the boy to an intelligent selection of his life's work. He is studied in his school work and advised from time to time wherein his greatest possibilities lie. By close co-operation with parents, friends, and former employers, sufficient information is secured to assist him, materially.

Not only do we advise each student as to the vocations in which he can be most successful, but, after a boy has completed a course, we also assist him in getting a position in the field in which his interests lie. We do not guarantee to place every boy, but we are willing to do all that we can to secure a position for him. In the past we have been very successful in this respect. No charge is made for securing positions for our students.

For catalogues and circulars of the Huntington School describing the work of the Preparatory and Business Departments address Huntington School, 316 Huntington Ave., Boston.



THE  
HUNTINGTON  
SCHOOL  
FOR BOYS

1915-1916

*Business Department*

Boston Young Men's Christian Association  
316 Huntington Avenue  
1915

*FRANK P. SPEARE, M.H., Director*

*IRA A. FLINNER, A.B., Headmaster*

*WILLIAM L. ESTERBERG, B.C.S., Head of Business Department*

## Aim and Scope

THE Business Department of the Huntington School provides a thorough commercial training for those who expect to enter business pursuits without completing a college or a technical school course of study. It also offers business courses to students who are preparing for higher institutions, but wish to supplement such preparation with special business training.

For the young man who enters of his own choice, or is obliged to enter business before having completed a college or a technical school course, there are few fields which offer so great opportunities as shorthand. There is a demand for male stenographers, and this demand is increasing. The stenographer of ability comes in close contact with men of affairs, and is in line for promotion. The government service is attractive to male stenographers. The salaries paid are from \$720. to \$1200. per annum. The tenure of office is good, and methods of promoting satisfactory.

The college student who can write shorthand finds it advantageous in pursuing his college course, and can make it a source of income while in college, or during the summer months.

Every young man no matter whether he intends to enter business as a bookkeeper or not should have a knowledge of the principles of bookkeeping. A business or professional man who does not have this knowledge is at the mercy of his employees. He should be able to check up their work and understand the various transactions. It is a fact that 90% of the men who engage in business for themselves fail and at the age of sixty are dependent upon others for a livelihood. Such failures are not caused by lack of industry but because of slipshod business methods. Many men in business figure their profits and losses on scrap paper which finds the waste basket shortly after a

careless estimate has been made. These failures would be lessened if the men in business had a knowledge of bookkeeping and business methods.

## COURSES OF STUDY

1. One year Stenographic course.
2. One year Bookkeeping course.

The above courses are open to high school graduates and students of equivalent preliminary training.

3. Two year Stenographic course.
4. Two year Bookkeeping course.
5. Four year Commercial course.

The various courses are made up in accordance with the requirements of each pupil approved by the Headmaster and include instruction in the following branches:

Bookkeeping as used in all kinds of business, Commercial Law, Shorthand (Pitman), Penmanship, Typewriting (touch), Commercial Geography, Industrial History, English Grammar and Composition, Correspondence, Written and Mental Arithmetic, Rapid Calculation, Filing and Cataloging, Spelling, Spanish, French and German, and such subjects of the Preparatory and Technical Departments as are suited to the students' needs.

## TUITION

The rate of tuition for all one and two year courses is \$175. a year. For the general Commercial course the rate is \$200. a year payable three-fifths at the opening of school, and two-fifths on or before February 1st. Rates for special courses will be quoted on application.

## BOOKKEEPING

In teaching bookkeeping we combine theory and practice. These subjects must of necessity go hand in hand if the best results are to be secured. We teach the pupil to make entries, post, take a trial balance, make statements of the condition of the business and close an ordinary ledger, before giving him vouchers to handle. From this point on, the work is just as practical as in any office.



Practical instruction is given in the special systems devised for certain classes of business. The science of commission, wholesale and retail, corporation accounts, etc., is thoroughly taught; the latest ideas are applied and the routine of the office strictly observed.

The instruction does not close with the knowledge of book-keeping. Students of ability are taken into the more advanced work in the second and third years of their course. Should students wish to enter business after completing the elementary work, they may do so and take up in the School of Commerce and Finance during the late afternoons and evenings, the work of this school. (See catalogue of School of Commerce and Finance.)

## SHORTHAND

We teach the Ben Pitman system of shorthand as we have found that no system offers a wider field of advancement than does this. The method of instruction is a combination of individual and class. The work of the individual students is corrected and errors noted, thus securing accuracy that can be gained in no other way. Herein lies the success of the student. Where it can be done to advantage, the students are grouped for dictation and practice. In this way we preserve the class stimulus while giving the individual attention necessary to insure thoroughness. Most students are able to complete the theory work in four months. The time spent thereafter is used to get the required speed.

## TYPEWRITING

The touch system of typewriting is used since it has been found that greater speed can be obtained and neater work turned out in this way. In this system, the machine is operated without looking at the keys. It is possible, therefore, for the typist to read notes and write at the same time, thus saving time. Accuracy and neatness are indispensable, for the employer bases his estimate of the stenographer's ability upon the correctness and appearance of the typewritten page. Recognizing this fact, the school places emphasis on these qualities.

## COMMERCIAL LAW

Instruction is given in the principles of the law of contracts, negotiable instruments, agency, bailment, partnership, corporations, insurance, real and personal property, etc. The course includes much information on the legality of every-day transactions which is of great value to the business man.

## RAPID CALCULATION

In connection with the work in written and mental arithmetic, the student is taught methods of rapid calculation which greatly facilitate his work, stimulate his mind and enable him to compute different problems with ease and rapidity. The daily work is extremely practical. Thorough drills are given not merely in rapid addition, but in all classes of problems incident to the ordinary business office. Short-cut methods are here introduced, and students are taught to apply them in the regular accounting room.

## PENMANSHIP

The ability to write well is of great importance to those who are employed in commercial pursuits. It is indispensable to the bookkeeper or correspondent; no other accomplishment save typewriting is of more value to the stenographer. The beautiful flourished style of writing, although valuable as an accomplishment, is not a necessity in business. It is the aim of this department to give the student instruction that will enable him in a short time to write rapidly, neatly and legibly.

## SPELLING

Correct spelling is absolutely essential to the stenographer or bookkeeper. Every student who expects to enter business work is obliged to take the instruction in spelling. The school has demonstrated that even the very poorest spellers can become proficient by close application. No attempt is made to teach students words not generally used.

## ENGLISH

Too much emphasis cannot be placed upon the value of English to both the bookkeeper and the stenographer. Too often pupils are sent into the office with only a superficial knowledge of English grammar and the forms of correspondence. We aim to give our students a thorough training in the elements of composition and a thorough drill in all kinds of correspondence forms. The department is especially strong, and English beyond the ordinary correspondence work is provided for those who wish to take an extended course to prepare for secretarial position. A systematic attempt is made to increase the vocabulary of students so that they will be familiar with the words in common use and can take dictation more easily.

## COMMERCIAL ARITHMETIC

A knowledge of arithmetic is an essential qualification of the bookkeeper. Accuracy is the first demand made upon the student, and thereafter emphasis is laid on rapidity. The essential divisions of the subjects are dwelt upon to give the student a knowledge of the various computations which arise in business. Special attention is given to fractions, decimals, percentage, interest, discount, etc. Mental arithmetic is also given considerable prominence.

## SPANISH AND FRENCH

Attention is called to the courses in the modern languages. The opening of the Panama Canal and the great conflict raging in Europe will greatly increase trade with Spanish countries. The recent trip of the business men of Boston to South American countries brings to our attention the importance of preparing for the work which is bound to result from the spread of business in that territory. Persons who have a knowledge of Spanish will be in great demand in the near future.



# THE CO-OPERATIVE ENGINEERING SCHOOL

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## CATALOG

1914-1915

PUBLISHED BY THE  
EDUCATIONAL DEPARTMENT  
OF THE  
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION  
316 HUNTINGTON AVENUE  
BOSTON, MASS.

# **DEPARTMENT OF EDUCATION**

## **BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION**

### **EVENING LAW SCHOOL**

#### **Evening Sessions Only**

Established in 1898; incorporated in 1904. Provides a four-years' course in preparation for the Bar and grants the Degree of Bachelor of Laws.

### **SCHOOL OF BUSINESS**

#### **Day and Evening Sessions**

Offers all of the courses of the regular Business School program, and additional cultural courses, preparing for business and admission to our School of Commerce and Finance.

### **SCHOOL OF COMMERCE AND FINANCE**

#### **Evening Sessions**

Established 1907; incorporated 1911. Offers the following four-year courses leading to the degree of B. C. S. (Bachelor of Commercial Science): Banking, Business Administration, Finance and Bond Salesmanship, and Professional Accountancy. Any one passing the examination for advanced standing, is enabled to complete any one of the four regular courses and secure the degree in three years. Special courses in addition to regular courses.

### **PREPARATORY SCHOOL**

#### **Evening Sessions**

A school of high school grade to prepare students for Colleges, Scientific Schools, West Point, Annapolis, Lowell School for Industrial Foremen, and the classified Civil Service.

### **HUNTINGTON SCHOOL**

#### **Day Sessions**

A high-grade school, consisting of a Grammar Department (5th, 6th, 7th and 8th grades), a Preparatory Department, fitting for the Colleges, Medical and Dental Schools, Massachusetts Institute of Technology, Annapolis, West Point, Lowell School for Industrial Foremen, Law Schools and the classified Civil Service, and a Technical Department, fitting for positions along engineering lines.

### **POLYTECHNIC SCHOOL**

#### **Evening Sessions**

A school offering three- and four-year courses in Chemistry, Chemical, Electrical, Structural, Railroad, and Municipal Engineering.

### **AUTOMOBILE SCHOOL**

#### **Day and Evening Sessions**

Deals with the construction, care, repair and operation of all types of gasoline vehicles; a large staff of teachers; ample equipment and garage.

For further information concerning any of the above schools, or departments, address the Director of Education,

FRANK PALMER SPEARE,  
316 Huntington Avenue,  
Boston, Mass.

CATALOG  
OF THE  
CO-OPERATIVE  
ENGINEERING  
SCHOOL  
BOSTON  
1914-1915

CATALOG  
OF THE  
INSTRUCTING STAFF  
TOGETHER WITH  
A Statement of the Requirements for Admission  
AND  
A Description of the Courses of Instruction



### OUR NEW HOME

This is a picture of the new Association Building which was finished in the Fall of 1913. It contains, among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, café, dormitories, shops and laboratories, library and reading room, camera club rooms, social and recreative rooms, and auditorium.



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# YEARLY CALENDAR

1914

1915

JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
4	5	6	7	1	2	3	..	..	..	1	2	3	4
11	12	13	14	15	16	17	12	13	14	15	16	17	18
18	19	20	21	22	23	24	19	20	21	22	23	24	25
25	26	27	28	29	30	31	26	27	28	29	30	31	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	..	..	..	1	..
8	9	10	11	12	13	14	2	3	4	5	6	7	8
15	16	17	18	19	20	21	9	10	11	12	13	14	15
22	23	24	25	26	27	28	16	17	18	19	20	21	22
..	..	..	..	..	..	..	23	24	25	26	27	28	29
..	..	..	..	..	..	..	30	31	..	..	..	..	..
MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	1	2	3	4	5
8	9	10	11	12	13	14	6	7	8	9	10	11	12
15	16	17	18	19	20	21	13	14	15	16	17	18	19
22	23	24	25	26	27	28	20	21	22	23	24	25	26
29	30	31	..	..	..	..	27	28	29	30	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
5	6	7	8	1	2	3	..	..	..	..	1	2	3
12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	..	..	25	26	27	28	29	30	31
..	..	..	..	..	..	..	..	..	..	..	..	..	..
MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
3	4	5	6	7	8	9	1	2	3	4	5	6	7
10	11	12	13	14	15	16	8	9	10	11	12	13	14
17	18	19	20	21	22	23	15	16	17	18	19	20	21
24	25	26	27	28	29	30	22	23	24	25	26	27	28
31	..	..	..	..	..	..	29	30	..	..	..	..	..
JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
7	8	9	10	11	12	13	..	..	1	2	3	4	5
14	15	16	17	18	19	20	6	7	8	9	10	11	12
21	22	23	24	25	26	27	13	14	15	16	17	18	19
28	29	30	..	..	..	..	20	21	22	23	24	25	26
..	..	..	..	..	..	..	27	28	29	30	31	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
3	4	5	6	7	8	9	..	..	..	1	2	3	..
10	11	12	13	14	15	16	10	11	12	13	14	15	16
17	18	19	20	21	22	23	17	18	19	20	21	22	23
24	25	26	27	28	29	30	24	25	26	27	28	29	30
31	..	..	..	..	..	..	31	..	..	..	..	..	..
FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	..	..	..	1	..
8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	21	22	23	24	25	26	27
..	..	..	..	..	..	..	28	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	1	2	3	4	5
8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	31	..	..	..	..	28	29	30	31	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
4	5	6	7	8	9	10	..	..	..	..	1	2	3
11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	31	..	..	..	..	..	..
MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
3	4	5	6	7	8	9	..	..	1	2	3	4	5
10	11	12	13	14	15	16	7	8	9	10	11	12	13
17	18	19	20	21	22	23	14	15	16	17	18	19	20
24	25	26	27	28	29	30	21	22	23	24	25	26	27
31	..	..	..	..	..	..	28	29	30	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
7	8	9	10	11	12	13	..	..	1	2	3	4	5
14	15	16	17	18	19	20	6	7	8	9	10	11	12
21	22	23	24	25	26	27	13	14	15	16	17	18	19
28	29	30	..	..	..	..	20	21	22	23	24	25	26
..	..	..	..	..	..	..	27	28	29	30	31	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..

# CALENDAR

## 1914

February 23, Monday  
Washington's Birthday Celebration (School exercises omitted)  
April 20, Monday  
Patriots' Day Celebration (School exercises omitted)  
May 30, Saturday  
Decoration Day (School exercises omitted)  
June 1-13, inclusive  
Final examinations  
June 16, Tuesday  
Graduation  
June 17-September 12, inclusive  
Summer vacation  
June 11 and 12, Thursday and Friday  
Entrance Examinations of Co-Operative Engineering School  
July  
Practical work commences for First Division  
September 9-10, Wednesday and Thursday  
Second Entrance Examinations for Co-Operative Engineering School  
September 14, Monday  
First Term of the year 1914-1915 commences  
September  
Practical work for Second Division commences  
October 12, Monday  
Columbus Day (School exercises omitted)  
November 26, Thursday  
Thanksgiving Day (School exercises omitted)  
December 21-26, inclusive  
Christmas Recess (School exercises omitted)

## 1915

January 18, Monday  
Second Term begins  
February 22, Monday  
Washington's Birthday (School exercises omitted)  
April 19, Monday  
Patriots' Day (School exercises omitted)  
May 31  
Decoration Day Celebration (School exercises omitted)  
June 1-12, inclusive  
Final Examinations  
June 10-11, Thursday and Friday  
Entrance Examinations of Co-Operative Engineering School  
June 11, Friday  
Graduation  
June 14-September 11  
Summer Vacation  
July  
Practical work for First Division commences  
September 8-9, Wednesday and Thursday  
Second Entrance Examinations for Co-Operative Engineering School  
September 13, Monday  
First Term of the school year 1915-1916 commences  
September  
Practical work for Second Division commences  
October 12, Tuesday  
Columbus Day (School exercises omitted)  
November 25, Thursday  
Thanksgiving Day (School exercises omitted)  
December 20-25 inclusive  
Christmas Recess (School exercises omitted)

## OFFICERS OF ADMINISTRATION

### General Administrative Officers

ARTHUR S. JOHNSON, *President*  
JACOB P. BATES, *Vice-President*  
HAROLD PEABODY, *Recording Secretary*  
FRANCIS B. SEARS, *Treasurer*  
GEORGE W. MEHAFFEY, *General Secretary*

### Educational Committee

JOHN ROUSMANIERE, *Chairman*  
WILLIAM E. MURDOCK  
ALBERT H. CURTIS  
MORGAN L. COOLEY  
GEORGE H. MARTIN

### Educational Administrative Officers

FRANK P. SPEARE, *Director of Education*  
GALEN D. LIGHT, *Asst. Director of Educ. and Bursar*  
H. W. GEROMANOS, *Supt. of Evening School System*  
IRA A. FLINNER, *Supt. of Day School System*  
CHARLES B. GRAY, *Secretary*  
ERNEST H. BROOKE, *Registrar*

## ADVISERS

The following gentlemen are acting in an advisory capacity on the more important executive matters of the school where their service is of the greatest value to us:

Dr. Richard Maclaurin, President of Massachusetts Institute of Technology.  
Charles A. Prosser, Secretary of National Commission on Industrial Education.

James P. Munroe, Secretary of Massachusetts Institute of Technology Corporation.

William McKay, General Manager, New England Gas & Coke Co.

Paul Winsor, Chief Engineer, Boston Elevated Railway Company.

## OFFICERS OF INSTRUCTION

H. W. GEROMANOS, S.B., Mass. Inst. Tech.  
DEAN

CARL S. ELL, S.B., M.S., Mass. Inst. Tech.  
ASSISTANT DEAN

---

J. A. COOLIDGE, S.B.  
*Mathematics and Physics*

LOREN N. DOWNS, Jr., S.B.  
*Electrical Engineering*

D. V. DRISCOLL  
*Chemistry*

CARL S. ELL, S.B., M.S.  
*Civil Engineering*

A. L. GARDNER, S.B.  
*Mechanical Engineering*

H. W. GEROMANOS, S.B.  
*Chemistry and Metallurgy*

W. E. RICHARDSON, S.B.  
*Surveying and Railroad Engineering*

FREDERICK C. HOSMER, A.B.  
*English*

JOHN W. HOWARD, S.B.  
*Surveying*

ERVIN KENISON, S.B.  
*Descriptive Geometry*

MYLES S. MAXIM  
*Mechanism*

THOMAS E. PENARD, S.B.  
*Mathematics*

M. E. PINKHAM  
*Mathematics*

CHARLES H. RESTALL, B.S.  
*Railroad Engineering*

C. H. SAMPSON, S.B.  
*Mechanical Drawing*

W. LINCOLN SMITH, S.B.  
*Electrical Engineering*

ELLWOOD B. SPEAR, A.B., Ph.D.  
*Chemistry*

SAMUEL A. S. STRAHAN  
*Chemistry*

D. M. TAYLOR, S.B.  
*Valve Gears*

HAROLD I. WILLIAMS, B.S.  
*Mechanical Drawing*

At the time of going to press, our annual election of instructors for the year has not been held, and so it is impossible to publish a complete list of the faculty for 1914-1915.



TAKING LEVELS FOR A CROSS SECTION  
Weymouth Landing  
Aspinwall and Lincoln, Civil Engineers



INSERTING COILS IN 150 HORSE-POWER ARMATURE  
Armature Shop  
Boston Elevated Railway Company

## GENERAL INFORMATION

It has generally been conceded that, where the practical and the theoretical elements of education can be taught simultaneously, the greatest good is derived by the student, and efforts are being made in all departments of education to accomplish this greatly desired end.

Technical school instruction, depending on class room work and laboratories, must always lack some of the vital characteristics of an actual manufacturing plant, owing to the fact that one is for educational purposes, while the other is operated for dividends. It is this latter fact that gives the Co-Operative School idea one great advantage over our usual educational plan. Instead of protecting the student, and training him for several years, for a line of work to which he may later find himself to be entirely unfitted, the Co-Operative School at once puts the boy to work in a commercial plant. There he learns life in its vital issues, as well as the problem of getting along with men; thus early finding out whether he has made a wise, or unwise, choice of his life work. This training, too, shows him the use and value of his school work, and finally gives him an unusual opportunity to acquire from actual experience that rare thing, *executive ability*, without which his life probably will always be spent on the lower levels of industry.

That the young men of New England might have an opportunity to attend such a technical school, where both practice and theory are correlated, and at the same time be enabled to defray a large part of the expense of their education by the returns from their practical work, the Co-Operative Engineering School of the Boston Young Men's Christian Association was started in 1909.

This school has now been in operation for five years, and the continually increasing interest in it, as well as its rapid and steady growth, show that it was much needed to fill a place that is filled by no other school in this vicinity.

## OBJECT OF THE SCHOOL

The fundamental aim of this school is to train, for positions in Engineering work, young men who are unable to attend the highest grade technical schools, or colleges. Thus they are enabled to advance farther, and more rapidly, in their chosen work than they could reasonably expect to do without further education than that of a high school course. The training is not in any sense that of a trade school, nor is it exactly that of our best scientific schools, but it stands between the two. The work done is that of a regular technical school, of high standards, but only the essential subjects are taken, and they, only so far as they will have a direct bearing on the life work of the student. In other words, it is a limited technical training of high grade. The fact that most of our instructors are graduates of, or instructors in, the Massachusetts Institute of Technology, will show the character of work being done.

At present there are four lines of Engineering work being given, and the end sought is to give to students who have already had a high school preparation, or its equivalent, a good training in the fundamental sciences of Mathematics, Chemistry, and Physics, and in the important applications of the principles of these sciences to the several branches of engineering. More stress is laid on the development of the ability to apply the acquired knowledge to new engineering problems, than to the memorizing of a multitude of details and very abstract theory, which, while valuable, cannot be gone into too deeply in a course of this type.

The class room instruction is given to small sections, and in the drawing rooms and laboratories, the students receive a great deal of personal attention. The independent solution of assigned problems forms a large part of nearly all courses.

The courses differ from those of many schools, in that a student is not permitted a wide range of subjects from which to choose, in the belief that better results are obtained by prescribing, after the student has selected the line of work for which he desires to prepare himself, the principal studies which he is to pursue.



## PLAN OF OPERATION OF THE SCHOOL

To illustrate the idea of the curriculum at the school, take for instance, the case of a young man "A" who desires to take our Mechanical Engineering course.

"A" is assigned to one of the plants of a firm that is co-operating with us. Here he is put to work and spends that week working in the shop. The next week, "B" his mate, who has spent the first week in the school, takes "A's" place in the shop, and "A" puts in the week at school. Thus the work goes on, the two men exchanging places at the beginning of each week. The studies pursued in the course have a direct practical bearing on the outside work, with the exception of a few courses added, because of the aim which we have, to produce a better citizen, as well as a better employee. The courses given have been decided upon after conference between the co-operating employers and the school authorities, and are the result of the best ideas of both. The subjects are taught in a practical, not in an abstract, or a theoretical way. Thus, in mathematics, instead of teaching algebra, analytic geometry and calculus, as so many separate subjects, they are correlated and taught as instruments for the solution of practical problems arising in engineering work. The aim throughout the course is to give it practical bearing and yet have it complete and thorough in all the needed essentials.

At the time of going to press, the School is working on an alternation interval of two weeks. This plan has been found to be more satisfactory than the one-week period, by a similar school, and, if it proves to be better for our students, we will retain it. Otherwise we will revert to the one-week period heretofore in vogue.

### Correlation of Practical and Theoretical Work

The outside work of the student is as carefully planned as that at the school, and it is progressive. The employers who co-operate with us generally agree, where practicable, to employ the boys in all the different departments of their establishments during their periods of practical duties; this training is just as complete as the school work, and is just as thorough. Where possible, the course of the learner is from the handling

of the raw material to the shipment of the finished product. This practical training includes the use of the machines, as well as the executive duties of the plant, so that at the end of his course the graduate may not only know how to do things, but also why they are done in certain ways, and he may, we hope, be of value in improving methods of work.

### Co-Operating Firms:

The following firms are co-operating with us at the present time and giving employment to our students:—

- Boston Elevated Railway Co.
- Boston & Albany Railroad Co.
  - Mechanical Engineering Department
  - Civil Engineering Department
- Boston & Maine Railroad Co.
  - Mechanical Engineering Department
  - Civil Engineering Department
- Boston Consolidated Gas Co.
- Aspinwall and Lincoln, Civil Engineers
- New York, New Haven & Hartford Railroad Co.
- Bay State Street Railway Co.
  - Civil Engineering Department
  - Mechanical Engineering Department
- Edison Electric Illuminating Co.
- A. D. Little Co., Inc.
  - Engineering Chemists
- H. F. Bryant, Civil Engineer
- Simplex Electric Heating Co.
- Simplex Wire and Cable Co.
- Frank E. Sherry, Civil Engineer
- Gray & Davis, Inc.
  - Electrical Devices for Automobiles

Several other firms have agreed to co-operate with us, but the demand for our boys, this year, was such that we were unable to fill all the positions offered.

Thus far, we have secured new positions for our students as the growth of the School has demanded. However, to be at all sure of work in his chosen branch of engineering, an applicant should file his application early, as the number of positions in any one line is necessarily limited.

## **SCHEDULES OF PRACTICAL WORK**

Below are typical schedules of practical work that have been prepared for our students by some of the companies which are giving our boys employment:—

### **BOSTON ELEVATED RAILWAY CO.**

#### **First Year**

Six months, pit work in carhouse.  
Six months, armature room.

#### **Second Year**

Twelve months, machine shop work.

#### **Third Year**

Six months, mechanical drafting room.  
Six months, power station work.

#### **Fourth Year**

Six months, line department.  
Six months, electrical engineer's department.

### **BOSTON & MAINE RAILROAD COMPANY**

Six months, air brake shops.  
One year, erecting work.  
One year, machine shop.  
One year, engine house repairs.  
Six months, drafting room and testing work.

### **BOSTON CONSOLIDATED GAS CO.**

Nine months, data takers.  
Three months, office.  
Three months, pipe fitter's helpers.  
Three months, pump man's helpers.  
Three months, blowers and exhausters.  
Three months, laboratory.  
Three months, boiler room.  
Three months, generator house.  
Three months, steam fitters.  
Three months, machine shop.  
Three months, assistant engineers.  
Six months, laboratory.  
Three months, distribution department.

### **SIMPLEX WIRE AND CABLE CO.**

Six months, Insulating Department.  
Six months, Braiding Department.  
Six months, Cable Shop.  
Six months, Twisting Department.  
Six months, Machine Shop Construction Gang.  
Six months, Electrical Construction Gang.  
One year, Testing Room.

## SIMPLEX ELECTRIC HEATING COMPANY

Machine Department . . . . .	1 year	
Grinding Department . . . . .	1 month	} $\frac{1}{2}$ year
Stock Department . . . . .	4 months	
Winding Department . . . . .	$\frac{1}{2}$ month	
Enamelling Department . . . . .	$\frac{1}{2}$ month	
Assembling Department . . . . .	$\frac{1}{2}$ year	
Testing Department, First Division . . . . .	$\frac{1}{2}$ year	
Testing Department, Second Division . . . . .	$\frac{1}{2}$ year	
Shipping Department, approximately . . . . .	2 mos.	} $\frac{1}{2}$ year
Drafting Department, approximately . . . . .	4 mos.	
General shop experience . . . . .	$\frac{1}{2}$ year	

The above programmes show what the boys do in their practical work, and the courses of study pursued at the school show what they do along academic lines. It will be seen that there is a considerable degree of correlation between theory and practice in the work they take up. The men under whose supervision the boys have been in their outside work, are practically unanimous in approval of our plan, and speak highly of the enthusiasm, earnestness and intelligence the students have shown in the performance of their duties.

### Attitude of Co-Operating Firms

Almost all the concerns which co-operated with us last year, took one, or more, additional pairs of our students this year, which in itself is significant of their attitude toward our plan.

### Earnings

For the practical work the student does, he is paid a certain amount per hour at the start, and a definite increase per hour, after completing fixed periods of service. The sum earned is more than enough to pay the tuition and the necessary expenses of schooling, but will not cover the cost of living.

In some cases the boys are paid at a higher rate than is called for by their schedule of pay, but that is a courtesy of the company that gives them employment, and is not in any way to be expected as a regular thing. The co-operating firms may make any salary schedule they desire, so long as it does not fall below that originally agreed upon.

The companies which co-operate with us, agree to pay our students ten (10) cents per hour during their first year of service; twelve (12) cents per hour during the second year; four-

teen (14) cents per hour during the third year, and sixteen (16) cents per hour during the fourth year.

Basing the earnings on this scale, the student will earn from five (5) to six (6) dollars per working week during the first year, and an increase of approximately one (1) dollar per working week, for each succeeding year of the four. As there are about thirty weeks of work per year, the earnings will be from one hundred and fifty dollars, upwards.

Frequently a student is able to earn much more than the regular rate, owing to getting extra pay for overtime work.

A census of our students who were working in January, 1914, gave the following data in regard to earnings:

Minimum weekly wage.....	\$5.00
Maximum weekly wage.....	12.65
Minimum earnings for January, 1914.....	9.60
Maximum earnings for January, 1914.....	31.65
*Minimum earnings for year 1913.....	150.00
*Maximum earnings for year 1913.....	375.00

## Expenses

As the earnings of the students average from \$150 to \$300 a year, while expense for tuition, books, drafting supplies, etc., and membership in the Y. M. C. A. is not over \$110, there is a considerable balance for incidentals.

While the School supplies all books, drawing instruments, slide rules, note books, etc., it has been found impracticable to furnish the students with paper, drawing ink and pencils, during the year. In consequence of this, the student will have a slight expense, of less than a dollar, for paper and pencils, after he uses those supplied at the beginning of the year.

## Relation of the Co-Operative School to High Schools

This School is peculiarly adapted to the high school graduate who, although financially unable to continue his studies further, still has the ambition and ability to get ahead if given the opportunity. Thus boys, being graduated from high school, can still live at home, but spend their time in fitting themselves for something better in the future.

\*Based on a total working period of thirty weeks.

This year, the School has a student body made up of graduates of the following High Schools:

Amesbury High School	Lynn English High School
Beverly High School	Malden High School
Black River Academy	Marblehead High School
Boston English High School	Marlboro High School
Boston Latin School	Medford High School
Boston Mechanic Arts High School	Middleboro High School
Bromfield High School	Milford High School
Cape Elizabeth High School (Maine)	Natick High School
Charlemont High School	Norwood High School
Chelsea High School	Peabody High School
Chicopee High School	Reading High School
Concord High School	Rindge Technical High School
Cony High School (Augusta, Maine)	Sanford High School (Maine)
Everett High School	Salem High School
Foxboro High School	Saugus High School
Framingham High School	Somerville English High School
Gardiner High School (Maine)	Swampscott High School
Gardner High School	Tilton Seminary
Groton High School	Tisbury High School
Hamilton High School	Wakefield High School
Hardwick High School	Waltham High School
High School of Commerce	Wayland High School
Holliston High School	Wellesley High School
Hudson High School	Weston High School
Huntington Preparatory School	West Roxbury High School
Hyde Park High School	Weymouth High School
	Wilmington High School

### Number of Students

The number of positions at our disposal in any one branch of engineering is necessarily limited, and so the number of students who can work part-time in that line is also limited. In consequence of this, those students who apply first, will get first consideration in the matter of positions, and those who

wish to enter should present their applications as soon as possible.

Those applicants who apply for admission to the School too late to be assigned to practical work, may attend the School every week, or every alternate week, as they may wish, and will be assigned to practical work as soon as an opening occurs.

### **Outside Interests**

A moderate participation in social and athletic activities is encouraged by the Faculty, although a standard of scholarship is required of the students which is incompatible with excessive devotion to such pursuits.

### **Four-Year Courses**

Regular four-year courses leading to a diploma, are offered in the following branches of engineering:—

- I. Civil Engineering
- II. Mechanical Engineering
- III. Electrical Engineering
- IV. Chemical Engineering

Descriptions of these courses and schedules showing the subjects of instruction included, will be found on succeeding pages.

### **Summer Schools**

There are day and evening summer preparatory schools, conducted by the Educational Department of the Association, and students having entrance conditions, or requiring further preparation for the entrance examinations, may avail themselves of this opportunity to cover the desired work.

Those of our students, who fail to pass in any of their school work, may be permitted to take up the study in the Summer School conducted by the Institute of Technology, provided of course, that Institution is offering such a course. Those students desiring this privilege should consult the Dean, as special permission must be obtained to attend many of the courses.

### **Physical Training**

Those students who desire gymnasium instruction may obtain the same by the payment of the gymnasium fee in ad-

dition to their tuition. This will entitle the student to exercise with the regular classes, as well as to use the gymnasium at other times.

### **Requirements for Admission**

Detailed information in regard to the requirements for admission to the courses of instruction in the School, will be found on succeeding pages. In general, the preparation necessary to enable an applicant to pursue one of the Courses, corresponds with that given by good high schools in their four-years' course.

### **Application for Admission**

An application blank will be found just inside the back cover of this catalog. Fill it out in ink and mail it, together with the required five (5) dollar deposit, to H. W. Geromanos, Dean, 316 Huntington Ave., Boston, Mass.

### **School Year**

The term begins September 14, 1914, and on succeeding years the school year will commence on the second Monday in September. The school exercises are suspended on legal holidays and for one week at Christmas.

### **Registration**

Each applicant for admission to the School is required to fill out an application blank, whereon he states his places of previous education, as well as the names of persons to whom reference may be made in regard to his character and previous training.

A deposit of five (5) dollars is required when the application is filed. Should the applicant be rejected, without being permitted to take the entrance examinations, one half this fee will be returned to him. Should the application be approved, the fee will be retained to cover the cost of his registration, examinations, etc. This fee is non-returnable.

On approval of the application, the applicant is required to fill out an attendance card, blank forms of which will be supplied. He is also required to fill out an application for membership in the Association. A twenty (20) dollar fee, which



is credited as part payment of his tuition, must be paid at this time.

This fee of twenty (20) dollars must be paid before a student will be assigned to a position at practical work, or allowed to attend classes.

Once the applicant has passed the entrance requirements and been accepted by the School, this fee is non-returnable.

An additional thirty (30) dollars is required to be paid before any books, or supplies, are issued to him.

Summing up the foregoing:

When a student applies for admission to the School, he makes a deposit of five dollars, which is not considered as part of the tuition, but is used to cover registration expenses. Of the hundred and ten (110) dollar tuition, twenty (20) dollars must be paid before an applicant will be assigned a position at practical work, and an additional thirty (30) dollars, or in all, fifty dollars must be paid before a student will have books and supplies issued to him.

## **Attendance**

Students are expected to attend all exercises in the subjects they are studying, unless excused by the Dean. With the exception of one hour in the middle of the day, exercises are held, and students are, in general, expected to devote themselves to the work of the school between 9 A.M. and 5 P.M. There are no exercises on Saturday after 1 P.M.

## **Books and Supplies**

The student is furnished with all books, drawing instruments, slide rules, and general supplies, required for his work. This material is loaned to him during the school year, and must be returned in good condition, on demand, or else paid for.

At the commencement of the year, pens, pencils, note books and note book paper, etc., are issued to each student, but none of these minor supplies will be issued again during the year. The cost for additional incidental supplies should not run much over one dollar per year.

## Status of Students

The ability of students to continue their courses is determined in part by means of examinations; but regularity of attendance and faithfulness to daily duties are considered equally essential.

Any student failing to make a satisfactory record in either school, or practical work, may be removed from his position in practical work, or from the School.

## Examinations

Examinations in all subjects are held at the close of each school year, in May and June, and cover the work done during the year. All students who maintain a year's average of 80% or over, in their daily work and informal examinations, in any subject, may be excused from the final examination in that subject, at the discretion of the instructor in charge, and with the approval of the Dean. When a final examination is taken, the year's rating in the subject is based half on the examination and half on the record of the year's work.

Students will not be admitted to professional work in the several courses without satisfactory records in those previous subjects on which this work especially depends. That is, for illustration, a student cannot take Advanced Surveying until he has completed Elementary Surveying.

Exceptions to this rule may be made in individual cases, after special consideration by the instructor in charge and the Dean.

## Reports of Standing

Informal reports in all subjects are sent every two months, and formal reports covering the year's work are sent at the close of each year. These reports are sent to students, and to the parents, or guardians, of the students. Notification will be made to parents, or guardians, in all cases of students advised or required to withdraw, or placed on probation.

Owing to the short school year, it is of vital importance to the student that he get a clear record in all his work each week, and where a student fails to pass in any subject, a notification is sent to his parents, or guardian, to that effect, at the close

of the week in which the failure was recorded, so that we may have the home influence exerted to bring his work up to a higher rating the next week.

### **Conduct**

It is assumed that students come to the School for a serious purpose, and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building, or to any of the furniture, apparatus, or other property of the school, the damage will be charged to the student, or students, known to be immediately concerned; but, if the persons who caused the damage are unknown, the cost of repairing the same may be assessed equally upon all the students of the School.

Students are expected to behave with decorum, to obey the regulations of the School, and to pay due respect to its officers. Conduct inconsistent with the general good order of the School, or persistent neglect of work, if repeated after admonition, may be followed by dismissal, or, in case the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is the aim so to administer the discipline of the School as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present, as his own, any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense, and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

### **REQUIREMENTS FOR GRADUATION**

To receive the diploma of the School, the student must have attended the School not less than two years, which must be those immediately preceding his graduation, except as postponement may be specially permitted. He must have completed the prescribed studies of the four years, and must, also, pass final examinations, if required, on subjects pertaining especially to his Course. In addition to this, he must have

completed his period of practical work to the satisfaction of his employer.

The student must, also, prepare a thesis on some subject included in his course of study; or an account of some research made by him; or an original report upon some machine, work of engineering, or industrial plant. This thesis, or design, must be approved by the Dean. Theses are to be written on one side only of paper of good quality, 8 x 10½ inches in size, with an inch margin on each side. Theses must be handed to the Dean not later than the day on which the first annual examination occurs.

All theses, and records of work done in preparation of theses, are the permanent property of the School.

The diploma of the School represents not only the formal completion of the subjects in the selected course of study, but also the attainment of a satisfactory standard of general efficiency. Any student, who does not show in the fourth-year work of his Course, that he has attained such a standard, may be required, before receiving the diploma, to take such additional work as shall test his ability to reach that standard.

No diploma can be given until all dues to the School are discharged.

The diplomas awarded graduates will be signed by both the School authorities and the employers.

Students completing the school course without being engaged in any practical work, will receive a special diploma.

## **Fees**

A fee of five (5) dollars is to be paid when application is filed, as a matriculation fee. This fee is non-returnable, if the applicant is permitted to take the entrance examinations. If he is rejected, without taking the examinations, one half the deposit will be returned.

The tuition fee is \$110 per year, and must be paid as follows:

Twenty dollars at the time of registration

Thirty dollars additional, before receiving any supplies

Thirty dollars December 1

Thirty dollars March 1

One half the year's tuition will be charged any student who attends the School during six school weeks.

The full tuition rate for the year will be charged any student attending the School over nine school weeks.

In case any student is compelled to discontinue attendance at the school, for any reason, after being assigned to practical work, there will be no rebate of any fees paid, under any conditions.

Upper class students whose tuition rate is \$110 shall pay it as follows:

Forty dollars at beginning of fall term

Thirty dollars December 1

Thirty dollars February 1

Ten dollars April 1

Students who were enrolled in the School, when the tuition was increased from \$100 to \$110 per year, will be allowed to complete their course at the same rate of tuition that existed at the time of their entrance.

Such students shall pay their tuition as follows:

Thirty dollars before September 14

Thirty dollars December 1

Twenty dollars February 1

Twenty dollars April 1

Failure to make the required payments on time, renders the student liable to be barred from his classes, until the matter has been adjusted with the Bursar.

This tuition fee includes membership in the Association, as well as the use of all books, drawing supplies, etc., which are required in the school work. Such supplies as are required by the student for his school work, are loaned to him by the School, and must be returned on demand, in good condition, or else paid for.

### **Increase of Tuition**

The tuition of all students entering the School, on and after January 1, 1916, will be \$125 per year.

Those students, who are already members of the School at that time, will be allowed to complete their course at the same rate of tuition that existed at the time of their entrance.

### **Payments**

All payments should be made to Galen D. Light, Bursar.

Make checks payable to Boston Young Men's Christian Association.



**CHECKING VOLTMETERS**  
 Head Place Station  
 Edison Electric Illuminating Company



**CHECKING BATTERY AMMETERS**  
 Atlantic Avenue Station  
 Edison Electric Illuminating Company

## **Residence**

For those students who will not be living at home, there are excellent accommodations, at very moderate rates, in the dormitories that are in our new building. These rooms may be had separately, or in groups with a common reception room, and the price varies from \$1.50, or \$2.00, upwards. As board costs from \$3.50 to \$5.00 a week, a student could get room and board for from \$5.00 a week to \$6.00 per week.

## **Location**

The buildings are located on Huntington Avenue, just beyond Massachusetts Avenue, and are within easy access to the various railroad stations, and the business and residential sections, by electric cars.

## **Special Students**

It is possible for students to enter the School and spend either every week at school, or else every other week at school, without being placed in practical employment. There is no extra charge under these conditions.

A student obtaining a low rating on his entrance examinations, or who may not be eligible to assignment to practical work, for other reasons, may, by special permission, be allowed to attend school either every week or every alternate week, and, if his record for the year justifies it, may be assigned to practical work the following year.

It has been found possible for students to attend school every week and to complete the course in three years. To do this, the student must have had a good high school education and cannot do the practical work in connection with the course.

## **Socials**

In order to provide for the social intercourse of the students, as well as to enable the men in the different divisions to meet one another, socials and entertainments are held monthly for their exclusive enjoyment. An out-door field meet is also held yearly, at the close of the school year, at which time various interclass competitive games are enjoyed.

## **Vacations**

The employers may allow our students one week vacation at Christmas, and two weeks vacation during the summer. They are not paid for this time. Whether a student shall have a full week at Christmas, or not, is at the option of the employer.

## **Summer Employment**

When a student, for good reason, is unable to continue his practical work during the summer, when the school is not in session, it is sometimes possible to get him leave of absence for the summer so that he can return to his employer in the fall. All special arrangements for the summer work must be referred to the Dean.

## **Probation Period**

When, for any reason, it is deemed advisable, the School reserves the right to place any entering student upon a period of probation, extending from one to three months, before placing him at practical work. Whether he shall be placed at work at the end of this time, will be determined by the character of the work that he accomplished during this probationary period.

## **POST-GRADUATE OPPORTUNITIES**

Students of good ability, on completing the Co-Operative Engineering Course, have the opportunity to attend the Massachusetts Institute of Technology, if they care to, and by taking special extra work in the Co-Operative School during their course they could reasonably expect to complete the Technology work and get their degree in two years. Through conference with officials of the Institute, it has been found that those of our courses equivalent to theirs will probably be accepted in place of theirs, and the student given a clear record in such subject, either by passing an examination, or at the discretion of the head of the Department. Since a large number of our courses are covering the same ground as those at the Institute, a capable student should be able at the end of his course to get a clear rating at Technology for at least the



equivalent of two years' work there. This offers a rare opportunity for an ambitious capable young man to get the most valuable kind of an education at small cost.

For further information about the School, write to

H. W. Geromanos, Dean,  
316 Huntington Avenue,  
Boston, Mass.

## REQUIREMENTS FOR ADMISSION

In general, the preparation necessary to enable an applicant to pursue successfully one of the regular courses, corresponds with that afforded by high schools of the better grade, offering a four-year course of study.

Every applicant must furnish references as to his character and ability, and must show cause why he may reasonably be expected to make a success of his course, both in the practical work and at the School. He must be willing and able to work hard, both mentally and physically.

For those unable to carry on the Engineering Courses owing to inadequate preliminary training, it has been found possible to plan special courses, of one, or two years' duration, in the Preparatory School to fit for the Engineering School.

All applicants planning to take the examinations, shall notify the Dean not less than ten days previous to the date of the examinations. For those students who may not be prepared to take the examinations in June, but who desire to work during the summer and then take the examinations in the Fall, arrangements may be made by consultation with the Dean.

Any subjects not passed in the June examinations may be passed at the September examinations.

Applicants for admission to the Co-Operative Engineering School are, in general, required to pass the entrance examinations of the School. Certificates of entrance examinations passed for admission to another similar school of the same, or higher grade, may be accepted in lieu of examinations.

A student obtaining an average of 80%, or over, during his high school course, in the subjects required for admission, may be given credit in those subjects, without examination, upon application to the Dean. Such applications, together with a certificate from his principal, or instructor, stating the work done and the grades received, shall be filed with the Dean, not less than ten days preceding the examination date.

The last page of this catalog is in the form of an application blank. It should be filled out in ink and forwarded, with the required five dollar deposit, to H. W. Geromanos, Dean, 316 Huntington Ave., Boston, Mass.

### **ADMISSION TO THE FIRST YEAR**

The student intending to enter the School should bear in mind that the broader his intellectual training in any direction, and the more extensive his general acquirements, the greater will be the advantages he may expect to gain. The importance of thorough preparation in the subjects set for examination also is great; for the character and the amount of instruction given in the School from the outset, leave little opportunity for one, imperfectly fitted, to make up deficiencies, and render it impossible for him to derive the full benefit from his course, or perhaps even to maintain his standing. The training given in the best high schools will, in general, afford suitable preparation.

The requirements of age and scholarship specified are regarded as a minimum in all ordinary cases, and only exceptional circumstances will justify any relaxation. Parents and guardians, are advised that it is generally for the ultimate advantage of the student not to enter under the age of eighteen years.

### **ENTRANCE EXAMINATIONS IN BOSTON**

Examinations for admission to the first year class will be held at 316 Huntington Avenue on June 11 and 12, and on September 9 and 10, 1914.

Students are advised to attend the June Examinations, if possible, in order that any deficiencies then existing may be made up in September, before entrance.

### **Examination Fees**

Before taking the examination, the applicant must have filed his application, together with the required five dollar deposit. If he gets a clear record in his examinations, he may file his registration cards, together with the twenty dollar registration fee, at any time before school opens. If, however, he wishes to start practical work, he must register before being assigned to a position.

## Order of Examinations

### Thursday, June 11, 1914

9.45 A.M. to 10.00 A.M.	Registration of Applicants
10.00 A.M. to 12.00 N.	Algebra
1.00 P.M. to 3.00 P.M.	Plane Geometry
3.00 P.M. to 4.00 P.M.	Arithmetic*

### Friday, June 12, 1914

10.00 A.M. to 12.00 N.	English
1.00 P.M. to 3.00 P.M.	Physics

## SUBJECTS FOR EXAMINATION

To be admitted as a student of the first-year class, the applicant must have attained the age of seventeen years, and must have passed satisfactory examinations in the following subjects:—

Arithmetic\*  
Elementary Algebra  
Plane Geometry  
English  
Elementary Physics

The examination in Physics is not required, but students not receiving a clear record in it, by examination or otherwise, will be required to take a special course in Physics, in addition to their regular first-year work.

The detailed requirements in the various subjects are as follows:—

### Arithmetic

The ordinary arithmetical calculations which should be familiar to all grammar school graduates. The examination will call for a knowledge of:—addition, subtraction, division and multiplication, of whole numbers, decimals, and fractions. The student is also expected to have a reasonable knowledge of percentage computations, as used in common arithmetic, and square root. He will not be called upon to do any work in the computation of interest, either simple, or compound.

Not required in 1914.

### Plane Geometry

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the

\*Not required in 1914.

circle and the measurement of angles; similar polygons; areas, regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

### **Algebra**

The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions; ratio and proportion; linear equations, both numerical and literal, containing one, or more, unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and numbers; exponents, including the fractional and negative.

### **English**

The examination in English will be as far as possible a test of the candidate's ability to express himself in writing in a manner at once clear and accurate.

The candidate will be required to write upon subjects familiar to him. His composition should be correct in spelling, punctuation, grammar, idiom and formation of paragraphs, and should be plain and natural in style. He will be judged by how well, rather than by how much he writes.

### **Physics**

The candidate will be expected to be familiar with the fundamental principles of Physics. It is especially desirable that he should have a good knowledge of general mechanics and of the mechanics of solids, liquids and gases. A knowledge of physical hypotheses is comparatively unimportant. Text-book instruction should be supplemented by lecture-room experiments. A sufficiently extended treatment of the subject will be found in any of the principal text-books now in use in secondary schools. Ability to solve simple problems will be expected.

### **Certificates**

A student obtaining an average of 80%, or over, during his high school course, in the subjects required for admission, may

be given credit in those subjects, without examination, upon application to the Dean. Such applications, together with a certificate from his principal, or instructor, stating the work done and the ranks received, shall be filed with the Dean, not less than ten days preceding the examination date.

### **Conditions**

A candidate failing in only one, or two, of the examination subjects, may be admitted with "conditions." A candidate incurring conditions in June must repeat, in September, examinations in those subjects in which he has failed.

In any case of a condition existing after a second examination in a subject, special arrangements must be made with the Dean, before a student will be allowed to attend classes.

### **Modern Languages**

There is no requirement in the modern languages for entrance to the School, and students who desire to take up these subjects during their course, may do so, provided they show the capacity to handle such work in addition to the required subjects.

## **OUTLINES OF SUBJECTS REQUIRED FOR ENTRANCE**

By writing the Dean, prospective applicants may receive a brief outline covering the subjects in Physics and Algebra upon which the Entrance Examinations are based. These outlines are issued in order that the applicant may concentrate his study upon subjects that are essential to the work, and not spread his efforts over too large a field.

## COURSES OF STUDY

### General Information

The schedules of the various courses are given on the following pages. The first year work of all courses is practically the same, with a few exceptions, which are made because of the need of the student for elementary training in his professional subjects. This is done so that he may gain more from his early practical work, as well as be of more use to his employer, by reason of a better understanding of the duties he may be called upon to perform.

The school year comprises eighteen weeks of class work, and one week of examinations for each division, so by dividing the total hours of class work by eighteen, the number of hours per week in any subject may be readily determined. For example, if mathematics comes ninety hours per year, it will be given five hours per week. Some subjects are given double time, but only extend through half the year. The student is expected to spend from one to two hours in preparation, for every hour given over to class work, in all subjects except Drawing.

The number in parenthesis, following the subject in the "Outlines of Courses," is the number by which that subject is identified in the descriptive matter under "Subjects of Instruction."

The work is so planned that the student will be required to spend from 50 to 60 hours, in preparation and class work, during each school week.

When a student elects a Course, he is required to complete all subjects in that Course, not indicated as "Optional," in order to receive a diploma. No subject is to be dropped, or omitted, without the consent of the Dean.

## CIVIL ENGINEERING

The purpose of this course is to give the student a broad education in those subjects which form the basis of all branches of technical education, and a special training in those subjects comprised under the term "Civil Engineering." It is designed to give the student sound training, both theoretical and practical, in the sciences upon which professional practice is based.

Civil Engineering covers such a broad field that no one can become expert in its whole extent. It includes Topographical Engineering, Municipal Engineering, Railroad Engineering, Structural Engineering, and Hydraulic and Sanitary Engineering. It covers land surveying, the building of railroads, harbors, docks and similar structures; the construction of sewers, water works, roads and streets; the design and construction of girders, roofs, trusses, bridges, buildings, walls, foundations and all fixed structures. All of these branches of Engineering rest, however, upon a relatively compact body of principles, and in these principles the students are trained by practice in the class-room, drawing room, the field and the testing laboratory.

The course is designed to prepare the young engineer to take up the work of assisting in the design and construction of structures; to aid in the location and construction of steam and electric railways, sewerage and water supply systems; and to undertake intelligently, supervision of work in the allied fields of mining, architectural, and electrical engineering and general contracting.



# COURSES OF STUDY

## I. Civil Engineering

	Hours of Exercise
<i>First Year</i>	
Mathematics I (10)	90
Physics I, Lectures and Recitations (20)	72
Physics I, Laboratory (21)	36
Elements of Electricity (126)	27
Descriptive Geometry I (42)	90
Mechanical Drawing (40)	72
Lettering (41)	18
English I (1)	54
Surveying I (50)	36
Surveying I, Fieldwork and Plotting (53)	108
<i>Second Year</i>	
Mathematics II (11)	72
Precision of Measurements (13)	9
Physics II, Lectures and Recitations (22)	54
Physics II, Laboratory (23)	36
Applied Mechanics I (30)	54
Descriptive Geometry II (43)	36
Topographical Drawing (54)	36
Mechanism (90)	27
Practical Electricity I, Lectures and Recitations (134)	36
Practical Electricity I, Laboratory (135)	36
English II (2)	36
Surveying II (52)	36
Surveying II, Fieldwork and Plotting (53)	108
Spherical Trigonometry (12)	9
<i>Third Year</i>	
Applied Mechanics II (31)	60
Railroad Engineering (57)	54
Railroad Engineering, Fieldwork and Drawing (58)	108
Theory of Structures (70)	30
Stereotomy (55)	36
Highway Engineering (56)	18
Theoretical Hydraulics (110)	54
Materials (81)	36
Practical Electricity II, Lectures and Recitations (136)	36
Practical Electricity II, Laboratory (137)	36
Metallurgy of Iron (147)	18
Dynamical and Structural Geology (160)	54
<i>Fourth Year</i>	
Structural Design (73)	108
Applied Mechanics Laboratory (34)	12
Theory of Structures, Bridges and Similar Structures (71)	90
Advanced Structures (72)	36
Advanced Railroad Engineering (59)*	18
Railroad Design (60)	54
Advanced Structures (72)	36
Hydraulic Motors (Optional) (111)	36
Hydraulic and Sanitary Engineering (112)	36
Concrete Construction (80)	36
Foundations (82)	18
Practical Electricity II, Lectures and Recitations (136)	36
Practical Electricity II, Laboratory (137)	36
Thesis	108

\*Omitted in 1914-1915.

## MECHANICAL ENGINEERING

This course is designed to give a broad foundation in those fundamental subjects which form the basis for all professional engineering practice, and to especially equip the young engineer with a thorough knowledge of the various phases of Mechanical Engineering. The course embraces instruction by text-book, lecture, laboratory and work-shop practice, with special references to the following branches: Steam Engineering, Hydraulic Engineering, Power Plant Design, Machine Design, Applied Electricity, Heat Engineering, and allied fields of the engineering profession.

The course affords training in the methods, and gives practice in the process of Construction, which develops in the student the capacity for thinking along mechanical lines, thus enabling him to base all of his work upon fundamental principles already learned, rather than upon empirical rules. It is the endeavor to give the student a thorough theoretical training, and meanwhile devote sufficient time to the practical work, that he may become a proficient mechanical engineer both in theory, and in practice, in all of the various branches of Mechanical Engineering.

## COURSES OF STUDY

### II. Mechanical Engineering

	<i>Hours of Exercise</i>
<i>First Year</i>	
Mathematics I (10)	90
Physics I, Lectures and Recitations (20)	72
Physics I, Laboratory (21)	36
Elements of Electricity (126)	27
Descriptive Geometry I (42)	90
Mechanical Drawing (40)	144
Lettering (41)	18
English I (1)	54
<i>Second Year</i>	
Mathematics II (11)	72
Precision of Measurements (13)	9
Physics II, Lectures and Recitations (22)	54
Physics II, Laboratory (23)	36
Applied Mechanics I (30)	54
Descriptive Geometry II (43)	36
Mechanical Engineering Drawing (91)	144
Mechanism (90)	45
Practical Electricity I (134)	36
Practical Electricity I, Laboratory (135)	36
English II (2)	36
Woodworking and Patternworking (Optional) (102)	54
Foundry Practice (99)	9
<i>Third Year</i>	
Applied Mechanics II (31)	60
Heat Engineering, Thermodynamics (95)	54
Heat Engineering, Boilers (95)	36
Valve Gears (90)	27
Machine Drawing (92)	144
Boiler Drawing (100)	36
Theoretical Hydraulics (110)	54
Materials (81)	36
Practical Electricity II, Lectures and Recitations (136)	36
Practical Electricity II, Laboratory (137)	36
Metallurgy of Iron (147)	18
Machine Work (103)	54
Forging, Chipping and Filing (Optional) (101)	36
<i>Fourth Year</i>	
Applied Mechanics III (33)	36
Applied Mechanics Laboratory (34)	12
Dynamics of Machines (94)	36
Machine Design (93)	144
Engineering Laboratory (97)	72
Hydraulic Motors (111)	36
Power Plant Design (96)	54
Concrete Construction (80)	36
Foundations (82)	18
Refrigeration (Optional) (98)	18
Thesis	108





**CLASS IN DYNAMO TESTING**  
Determining the Characteristics of a Direct Current Shunt Generator



**IN THE RESEARCH LABORATORY**  
A. D. Little Co., Inc., Engineering Chemists  
Hydrolyzing Wood Fiber into Alcohol



**CLASS IN SURVEYING FIELD WORK**  
Making a Stadia Survey of Jamaica Pond

## ELECTRICAL ENGINEERING

Electrical Engineering having in recent years developed along lines demanding a thorough appreciation of physical theory, as well as a broad working knowledge of Mathematics, it is essential that students planning to take this course should realize the fundamental necessity of obtaining a solid grounding in these subjects upon which to build.

It is not the purpose of the course to attempt the impossible aim of turning out fully trained engineers in the various branches of the science, especially as it is becoming daily more and more differentiated and specialized; but rather to lay a broad and thorough foundation for future progress along the lines of work which may particularly appeal to the individual, by giving him a good working acquaintance with the essential principles, which underly each of the more specialized branches of professional activity. Parallel with the theoretical work runs a carefully planned course of laboratory work which is intended to develop the student's powers of accurate observation of planning work and methods for himself, with due regard to saving of time and precision of results. For more detailed matters, the reader is referred to the description of the several courses and subjects of instruction.

## COURSES OF STUDY

### III. Electrical Engineering

	Hours of Exercise
<i>First Year</i>	
Mathematics I (10)	90
Descriptive Geometry I (42)	90
Lettering (41)	18
English I (1)	54
Physics I, Lectures and Recitations (20)	72
Physics I, Laboratory (21)	36
Mechanical Drawing (40)	144
Elements of Electricity (126)	27
<i>Second Year</i>	
Mathematics II (11)	72
Precision of Measurements (13)	9
Physics II, Lectures and Recitations (22)	54
Physics II, Laboratory (23)	36
Applied Mechanics I (30)	54
Descriptive Geometry II (43)	36
Mechanical Engineering Drawing (91)	72
Mechanism (90)	36
Direct Current Machinery (128)	18
Direct Current Practice (129)	18
English II (2)	36
Theoretical Electricity (127)	27
Methods of Wiring and National Code (131)	9
Electrical Engineering I, Laboratory and Reports (122A)	72
Woodworking and Patternwork (Optional) (102)	54
<i>Third Year</i>	
Applied Mechanics II (31)	45
Heat Engineering: Thermodynamics (95)	54
Electrical Engineering II, Laboratory and Reports (122 B)	63
Technical Electrical Measurements (130)	18
Machine Drawing (92)	72
Hydraulics (110)	54
Alternating Currents, Lectures, Recitations and Problems (138)	45
Alternating Current Machinery, Lectures, Recitations and Problems (139)	63
Alternating Current Laboratory and Report: (139 A)	45
Forging, Chipping, and Filing (Optional) (101)	54
Construction and Operation of Intercommunicating Telephones (Optional) (124)	6
<i>Fourth Year</i>	
Studies in Electrical Construction (123)	27
Applied Mechanics Laboratory (34)	12
Illumination and Photometry (132)	18
Central Stations (121)	18
Electric Railways (133)	27
Hydraulic Motors (111)	36
Electrical Engineering III, Laboratory and Reports (122 C)	60
Alternating Current Machinery, Lectures and Recitations (139)	36
Alternating Current Machinery, Laboratory and Reports (139 A)	30
Electrical Transmission of Power (120)	18
Metallurgy of Iron (147)	18
Surveying I A (50 A)	36
Engineering Laboratory (97)	36
Machine Work (Optional) (103)	54
Thesis	108

## CHEMICAL ENGINEERING

During the great industrial advance of recent years, chemical industry has been in the front rank of progress, and perhaps the most potent reason for this, may be found in the replacement by scientific guidance, of the old rule of thumb methods.

Again, owing to the keenest competition, manufacturers have been compelled to utilize every product of their plants and this has called for skilled chemical knowledge.

The Course in Chemical Engineering has, for its purpose, the training of students competent to take responsible places in the operation of industries based on chemical principles.

During their course, the students are employed in chemical industries, as gas manufacturing plants, chemical engineering companies, etc., so that they not only get an excellent training in the theory of such work at school, but get a thorough familiarity with the technical side of the industry, as well.

The class work includes a training in Inorganic, Analytical, Organic, and Industrial Chemistry, which is accompanied by appropriate laboratory work.

In addition to the foregoing subjects, the student is given a good knowledge of mechanical and electrical subjects, as Drawing, Applied Mechanics, Direct Current Practice, Technical Electrical Measurements, etc., which are taken up in a way to give them especial bearing on the work of the Course.



## COURSES OF STUDY

### IV. Chemical Engineering

<i>First Year</i>	Hours of Exercise
Mathematics I (10)	90
Physics I, Lectures and Recitations (20)	72
Physics I, Laboratory (21)	36
Elements of Electricity (126)	27
Descriptive Geometry I (42)	90
Mechanical Drawing (40)	54
Lettering (41)	18
English I (1)	54
Inorganic Chemistry, Lectures, Laboratory and Recitations (142)	144
German I (170)	54

<i>Second Year</i>	
Mathematics II (11)	72
Precision of Measurements (13)	9
Physics II, Lectures and Recitations (22)	54
Physics II, Laboratory (23)	36
Applied Mechanics I (30)	54
Descriptive Geometry II (43)	36
Mechanical Engineering Drawing (91)	72
Mechanism (90)	36
Qualitative Analysis (143)	108
Quantitative Analysis (144)	54
English II (2)	36
German II (171)	54

<i>Third Year</i>	
Applied Mechanics II (31)	60
Heat Engineering, Thermodynamics (95)	54
Organic Chemistry (145)	36
Organic Chemical Laboratory (145)	90
Machine Drawing (92)	72
Direct Current Practice (129)	18
Theoretical Hydraulics (110)	54
Technical Electrical Measurements (130)	18
Electrical Engineering Laboratory I (122 A)	72

<i>Fourth Year</i>	
Theoretical Chemistry (149)	54
Applied Mechanics Laboratory (34)	12
Industrial Chemistry (146)	54
Industrial Chemical Laboratory (146 A)	108
Organic Chemistry (145)	36
Organic Chemical Laboratory (145)	90
Engineering Laboratory (97)	36
Heat Measurements (24)	18
Thesis	108

## SUBJECTS OF INSTRUCTION

Instruction is given by lectures and recitations, and by practical exercises in the field, the laboratories, and the drawing-rooms. A great value is set upon the educational effect of these exercises, and they form the foundation of each of the four Courses. Text-books are used in many subjects, but not in all. In many branches, the instruction given differs widely from available text-books; and, in most of such cases, notes on the lectures and laboratory work are issued, and are furnished to the students. Besides oral examinations in connection with the ordinary exercises, written examinations are held from time to time. At the close of the year, in May and June, general examinations are held.

In the following pages will be found a more or less detailed statement of the scope, as well as the method of instruction, of the subjects offered in the various Courses. The subjects are classified, as far as possible, related studies being arranged in sequence.

The subjects are numbered, or lettered and numbered, for convenience of reference in consulting the various Course Schedules. As the total number of hours per term devoted to a subject sometimes varies in different Courses, these hours are not in every case given in connection with the following descriptions.

The requisites for preparation, include not only the subjects specified by number, but also those required as a preparation for them. The reason for this is that to properly carry on the more advanced subjects, the student must have become proficient in all subjects necessary for a clear comprehension of the last subject. Some studies specified as being required in preparation, may be taken simultaneously. The student must complete such subjects before starting on more advanced work.

By careful consideration of the Course Schedules, in connection with the following Description of Subjects, the appli-

cant for a special Course may select, for the earlier part of that Course, such subjects as will enable him to pursue later those more advanced subjects which he may particularly desire.

Applications for exception, for sufficient causes, from the required preparation, as stated in connection with each subject described below, will always be considered by the Dean.

The topics, included in the list which follows, are subject to change at any time by action of the School authorities.

## SYNOPSIS OF COURSES

### 1. English I.

This is a course in the principles of composition and letter writing. Special attention is given to spelling, punctuation and grammar.

The chief object of the work is to enable the student to write correct, lucid and easy business English.

### 2. English II.

PREPARATION: 1.

This Course is a continuation of English I and is devoted to writing business letters, to descriptions of processes and machinery, and to all other possible means of enabling the student to express himself with accuracy and precision, both orally and in writing.

### 10. Mathematics I.

PREPARATION: ALGEBRA, GEOMETRY.

Variation, logarithms, slide rule, exponential equations, the uses of formulas in Physics and Engineering.

Trigonometry, including circular measure, co-ordinates, trigonometric ratios, formulas, law of sines, law of cosines, solution of right and oblique triangles, applications to problems in Physics and Engineering, Elements of Spherical Trigonometry.

### 11. Mathematics II.

PREPARATION: 10.

Co-ordinates, plotting of functions, interpolation, the straight line, curves represented by various equations, graphic solution of equations, determination of laws from the data of exper-

iments. Rate of increase, differentiation, determination of maxima and minima by differentiation, integration, definite integrals, determination of mean value, area and volume by integration, center of gravity, moment of inertia, partial differentiation.

## **12. Spherical Trigonometry (Required in Course 1).**

PREPARATION: 10.

This course consists of nine recitations during the first part of the second year. A study is made of the proofs of formulas of right and oblique spherical triangles, and their application to surveying and other engineering problems.

## **13. Precision of Measurements.**

PREPARATION: 10.

This course, which is required of all students in the second half of the second year, comprises a thorough discussion of the fundamentals of the Theory of Measurements, including a study of the Sources of Error, the Best Representative Value of the result of a series of measurements, the determination of the several Precision Measures of the result of one's work, the converse problem of how best to proceed in order to reach a given degree of precision, and a thorough consideration of the proper use of Significant Figures. The text-book is Goodwin's Notes on Precision of Measurements.

## **20. Physics I.**

The subjects considered are general mechanics, molecular mechanics, wave-motion and optics, which topics are discussed both mathematically and experimentally. It is the purpose of the course to lay a thorough foundation for subsequent study of experimental, and technical physics. Hence it is planned with immediate reference to familiarizing the pupil with the fundamental principles of the science. The lectures are illustrated by suitable experiments.

## **21. Physical Laboratory I.**

PREPARATION: 20.

A Course of experimental exercises in the first year, laid out individually for each student. The experiments are correlated, so far as practical, with the lecture and class-room work,

the first year being devoted to experiments in mechanics. The use of the various instruments of precision is taught, as far as may be, in connection with experiments, each of which illustrates some different method, or principle. The experiments relate to the mechanics of solids, liquids, and gases.

## **22. Physics II.**

PREPARATION: 20.

A Course of experimental lectures which is a continuation of Physics 1. In this work the student completes the study of physics started in Physics 1.

## **23. Physical Laboratory II.**

PREPARATION: 22.

A series of experiments in the second year, correlated as far as practicable with the lecture course. The experiments in Optics include the use of a compound microscope, the determination of the focal length of lenses, gas photometry, indices of refraction, and elementary spectrum analysis. All work is strictly quantitative, and the attention of the student is especially directed to the precision discussion of his results.

## **24. Heat Measurements.**

PREPARATION: 22.

A Course in which is studied the various methods of measuring high temperatures by pyrometric methods. The experimental work includes the use of the thermo-electric, calorimetric, and electric resistance, pyrometers, together with selected experiments giving instruction in the use of Seger Cones, heat treatment of steel, tempering, etc.

## **30. Applied Mechanics I.**

PREPARATION: 10, 11, 20, 22.

The Course comprises a study of statics, consisting of the general methods and applications of statics, including the determination of the reactions, stresses in frames; of distributed forces, center of gravity; of moment of inertia, radius of gyration of plane areas and solids, including principal axes and principal moments of inertia; of kinematics and dynamics, including the equations for uniform and varying rectilinear and curvilinear motion, centrifugal force, unresisted projectile,

pendulum, harmonic motion, rotation, combined rotation and translation, momentum and angular momentum, center of percussion, impact, work, power and kinetic energy.

### **31. Applied Mechanics II.**

PREPARATION: 30.

This Course comprises a study of the strength of materials, mathematically treated, including the stresses and strains in bodies subjected to tension, to compression and to shearing; common theory of beams, with thorough discussion of the distribution of stresses, shearing forces, bending moments, slopes and deflections.

A study is also made of the strength of columns, shafts and springs.

### **32. Applied Mechanics II A.**

PREPARATION: 30.

A brief Course covering the subjects treated in Applied Mechanics II, but in a shorter time.

Required in Course III.

### **33. Applied Mechanics III.**

PREPARATION: 31.

A Course treating of the laws of friction, including a study of the distribution of friction on shaft journals and pivots; also a study of the transmission of power by belting and by ropes, and of the friction reducing power of lubricating oils. A study is also made of the continuous girder, so planned as to apply to beams, and applications of the principles of Mechanics and of the Strength of Materials to the design of other forms of simple structures.

### **34. Applied Mechanics Laboratory.**

PREPARATION: 31.

The tests made by the students in the Applied Mechanics Laboratory include tests to determine the modulus of elasticity, limit of elasticity, yield point and tensile strength of steel bars; tests of the deflection and of the transverse strength of a wooden beam subjected to a transverse load; tests to determine the modulus of elasticity and tensile strength of wire; tests on cement mortars, including practice in laboratory methods.

#### **40. Mechanical Drawing.**

The Course extends through the first year. The instruction in Mechanical Drawing relates to the drawing instruments and materials, instrumental constructions and the drawing of irregular curves, tracing in ink, conventions, lettering, dimensioning and working methods. The work includes several drawings of machine details.

#### **41. Lettering.**

The work consists of letter drawing and stroke lettering for working drawings. The instruction is given by short lectures on the principles and processes of freehand drawing, and by individual criticism. The latter part of the course is devoted to further work in letter drawing and stroke rendering, and the construction of title designing.

#### **42. Descriptive Geometry I.**

The Course covers the simpler problems on the point, line and plane and various constructions in the projection of solids, including sections and developments.

In the latter half of the course, the problems on the line and plane are completed, and the projection of solids is continued through the intersection of solids bounded by plane faces. Isometric drawings and several practical applications are given.

#### **43. Descriptive Geometry II.**

PREPARATION: 42.

The Course is a continuation of Descriptive Geometry I, and deals with single and double curved surfaces; their intersection by oblique planes, tangent planes, penetrations, development, and so forth.

#### **50. Surveying I.**

PREPARATION: 10, 11.

This Course consists of two lectures, or recitations, per week during the first year. The student is taught the theory of the various instruments used in plane surveying, the methods of carrying out various surveys, and the application of contour maps to the solution of problems of drainage, road location, landscape engineering, etc. The text-book used is The

Principles and Practice of Surveying by Profs. Breed and Hosmer, Vol. I.

#### **50A. Surveying I A.**

This is a brief Course for students taking Courses II and III, to give them instruction in the essential principles of surveying practice.

#### **51. Surveying I (Fieldwork and Plotting).**

PREPARATION: 50.

This Course is taken simultaneously with Surveying I, and consists of six hours of exercise per week throughout the year. The student is taught the use of the chain, tape, compass, transit, and various forms of leveling instruments. The work in the drawing room consists in making the computations which arise in the work of a surveyor, and in making scale drawings by the methods in common use.

#### **52. Surveying II.**

PREPARATION: 50, 51, 12.

This Course is a continuation of Surveying I, and consists of two lectures, or recitations, per week throughout the second year. The student is taught the theory of the stadia and plane table in topographic surveying, the methods of making astronomical observations, and of conducting city and photographic surveys. The text-books used are *The Principles and Practice of Surveying* by Profs. Breed and Hosmer, Vols. I and II.

#### **53. Surveying II (Fieldwork and Plotting).**

PREPARATION: 52.

This Course is taken simultaneously with Surveying II and consists of six hours of exercise per week throughout the second year. A stadia survey is first made and later a topographical map made from the notes taken in the field. The practice of plane table surveying, the determination of elevations by barometer, and the conduct of photographic surveys are also studied.

#### **54. Topographical Drawing.**

PREPARATION: 50, 52.

This Course consists of two hours of exercise per week throughout the year. A study is made of the different topographical



signs used on surveying maps, both in pen and ink and in wash color. Each student is required to make a number of plates of each kind of topography, and to become reasonably proficient in the making of topographical maps.

### **55. Stereotomy.**

PREPARATION: 40, 42, 43.

This Course consists of three hours of exercise per week throughout the year. The student studies the applications of descriptive geometry to the making of drawings for masonry structures, such as intersecting arches and walls, abutments, piers and culverts. The text-book is a set of specially prepared notes on Stereotomy.

### **56. Highway Engineering.**

PREPARATION: 57.

This Course consists of one lecture, or recitation, a week throughout the year. A study is made of the principles governing the location, construction, and maintenance of roads, and the construction and maintenance of the various kinds of pavements for city streets. The text-book used is Baker's work on Roads and Pavements.

### **57. Railroad Engineering.**

PREPARATION: 50, 51, 58.

This Course consists of three hours of exercise a week throughout the year. A study is made of the mathematics of the various curves used in engineering, with their application to the location of railroads, highways, sewers, pipe lines, etc. The easement curve is also studied, and the various methods of staking out and computing earthwork. The text-books used are Prof. Allen's Railroad Curves and Earthwork, and his Field and Office Tables.

### **58. Railroad Fieldwork and Drawing.**

PREPARATION: 57.

This Course consists of six hours of exercise a week throughout the year. A reconnaissance is first made of a railroad about a mile and a half in length, followed by a preliminary survey with transit and level for the determination of contours, as a basis for fixing the location survey. All this work follows modern practice in laying out railroads. The greater

part of the fieldwork is devoted to a systematic drill in running in curves of various kinds, including transition curves, and in staking out fieldwork. The drawing consists in plotting up the preliminary survey of the railroad surveyed.

#### **59. Advanced Railroad Engineering.**

PREPARATION: 58.

This Course consists of one exercise a week throughout the year. The following subjects are treated: maintenance of way, the economics of railroad location, including the study of train resistance and the influence of grade, distance, rise and fall, and curvature; rolling stock and motive power brakes, signals, yards and tunnels, and street railroads. Each student is given an individual problem on the design of an interlocking plant, and also problems on railroad practice. The text-books are Tratman's Track and Trackwork and also neostyled notes.

#### **60. Railroad Design.**

PREPARATION: 59.

This Course consists of three hours a week in the drawing room throughout the fourth year. The design of freight yards and terminals is studied, and each student is required to solve individual problems on practical railroad design.

#### **70. Theory of Structures.**

PREPARATION: 31.

This is a Course of thirty exercises in the third year, devoted to class and drawing-room work in studying the loads, reactions, shears and moments acting upon structures of various kinds as roofs and bridges. A thorough study is also made of the various functions of the influence line and the methods used to determine the position of moving loads to produce maximum shears and moments on bridges. The text-book used is Prof. Spofford's Theory of Structures.

#### **71. Theory of Structures, Bridges and Similar Structures.**

PREPARATION: 70.

This Course treats of the computation and design of structures of wood, steel and masonry, by analytical and by graphical methods. The subjects considered are: the plate girder, roof and bridge trusses of various forms, trestles of wood and

steel, and arches of metal, stone, and concrete. The object is to train the student thoroughly in the application of the principles of mechanics to the design of structures. The text-book used is Prof. Spofford's Theory of Structures.

## **72. Advanced Structures.**

PREPARATION: 71.

This Course treats of the computation and design of retaining walls, masonry dams, masonry arches, continuous girders, movable bridges and skeleton frames for buildings. Only the more simple cases are considered.

## **73. Structural Design.**

PREPARATION: 72.

A Course of six hours per week, throughout the fourth year, in which the students are instructed in the design of structures of wood, stone and metal. Each student is given a set of data, and is required to perform all the computations and to make designs and working drawings for several structures, such as a masonry dam, a plate girder bridge, and a wooden roof truss. His work is criticized as it progresses.

## **80. Concrete Construction.**

PREPARATION: 72.

A Course consisting of lectures and drafting, in which instruction is given in the theoretical and practical principles involved in the design of structures of plain and reinforced concrete. The Course includes a study of the simple reinforced concrete beam, the design of slabs, T-beams, columns and footings. Instruction is given by means of lectures and text-books, in conjunction with which each student is given practical problems in design to be worked out in the drawing room.

## **81. Materials.**

PREPARATION: 72.

This Course consists of two lectures, or recitations, per week throughout the third year, in the study of the methods of manufacturing, properties and strength of various materials used by the engineer, such as brick, cement, concrete, iron and steel. A study is also made of the properties of wood and stone. The text-book used is Johnson's The Materials of Construction.

## **82. Foundations.**

PREPARATION: 71.

A Course of eighteen lectures during the fourth year. The subjects treated in this Course are as follows: Building stones and concrete, bearing power of different kinds of soil, examination of the site, designing the footings, whether of masonry, or of steel and concrete, independent piers, pile foundations, compressed air processes, freezing processes, retaining walls, together with some details of buildings for industrial purposes, constructed of steel, or of reinforced concrete. Baker's Masonry Construction is used as a text-book.

## **90. Mechanism and Valve-Gears.**

PREPARATION: 11, 40, 42.

This Course includes a systematic study, not only of the motions and forms of the various mechanisms occurring in machines, and the manner of supporting and guiding the parts, independently of their strength, but also of the design of gear-teeth. The course also includes the theory and practice of designing valve-gears for steam-engines, including the plain slide valve, link motions, radial valve-gears, double valves and drop cut-off valves.

## **91. Mechanical Engineering Drawing.**

PREPARATION: 40, 90.

The construction includes the drawing of simple machine details, such as bolts and nuts, screws, springs, keys, flanges, pipe fittings, etc.; teaching systems of dimensioning, conventional representations, and blue-printing. The latter part of the work consists of drawing, illustrating the class-room work in connection with the courses in Mechanism and Valve-gears, including the design of cams, gear-teeth, slide-valves, double valves, the Stephenson link, etc.

## **92. Machine Drawing.**

PREPARATION: 91.

The aim of the Course is to teach the proper way of making the necessary dimensioned drawings for use in practice, good shop systems being adopted. The instruction includes the making of working detail and assembly drawings of machinery from measurements.

### **93. Machine Design.**

PREPARATION: 91, 31.

The main object of the Course is the application of principles already learned to the solution of problems in design. Each student makes a number of complete designs, such as a boiler, a large shaft with pulleys and gears, a set of couplings, a power shear, geared pump, etc. For each design the constructive details are carefully discussed; each student then makes all the necessary calculations to determine the dimensions of every part, and finally he completes the working drawings. The scope of the designs is such as to include most of the elementary principles of design, and yet is sufficiently limited to enable the student to complete every detail, as it is believed that only by such thorough work can real benefit be obtained.

### **94. Dynamics of Machines.**

PREPARATION: 90, 93.

The Course in Dynamics of Machines includes a number of the principal applications of Dynamics to moving machinery such as governors, fly-wheels, the action of the reciprocating parts of the steam-engine, running balance, whirling speed of shafts, etc. The work is supplemented by a course in drafting.

### **95. Heat Engineering: Thermodynamics and Boilers.**

PREPARATION: 10, 11, 31.

It includes a study of the principles of thermodynamics; a discussion of the properties of gases, saturated and superheated vapors, especially of air and steam; of the flow of fluids through orifices, nozzles, pipes and meters, a discussion of the action of the steam injector; a study of the various cycles of the hot air, internal combustion and steam engines, of the turbine, air compressor and refrigerator systems. These engineering applications are treated from the physical, analytical and graphical points of view, so as to give the student a good foundation in the principles of thermodynamics, in the solution of actual heat engineering problems. The Course also includes a study of the simple, compound and multiple expansion steam engine, of the different types of gas engines, of the gas producer, of compressed air and refrigerator machines, and the methods of testing such machines.

The latter part of the Course includes a study of the various types of steam boilers and the different kinds of power plants.

#### **96. Power Plant Design.**

PREPARATION: 31, 93, 95.

The Course consists largely of drawing-room work and calculations, with such lectures as may be needed from time to time. The work of the Course consists in making the working drawings necessary to show the location of boilers, engines, auxiliaries, piping, coal pockets, etc., for a power house, and also drawings and calculations of some of the details.

#### **97. Engineering Laboratory.**

PREPARATION: 95.

This Course consists of exercises and tests upon the various forms of appliances in use in the power plant, such as:

- Boiler Test
- Steam Engine Testing
- Steam Turbine Testing
- Fans and Blowers
- Pumps—Centrifugal and Duplex
- Condensers
- Feed Water Heaters
- Flue Gas Analysis

#### **98. Refrigeration.**

PREPARATION: 95.

The Course covers a study of the principles underlying refrigeration processes, together with a discussion of the properties of various refrigerants and the common types of refrigerating machines and systems. In connection with the work, visits are made to plants where artificial refrigeration is used.

#### **99. Foundry Practice.**

A lecture Course dealing with coring, ramming, venting, facing, spruing, use of risers, etc., as used in flask moulding. Various forms of moulding machines, as power squeezer, hinged, and turn over are studied. Foundry appliances for pouring are discussed.

### **100. Boiler Design and Drawing.**

PREPARATION: 95.

This Course is devoted to a consideration of the most modern methods of boiler designing and construction, and in connection with the lecture Course, the student is required to make drawings from specifications, illustrating the principles of the design and also the details of a modern boiler.

### **101. Forging, Chipping and Filing.**

This Course consists of one two-hour exercise per week, or its equivalent. In the forging work, the student is instructed in the building and care of fires, heating, drawing, bending, upsetting and welding.

The exercises in Chipping and Filing give instruction about the various tools and files used, and then the student is given practice in their use by various problems in chipping chamfers, keyways, etc.; and then in filing problems, as parallel surfaces, filing to template, slide and drive fits, etc.

### **102. Wood-working and Pattern Work.**

This is a Course designed to give students facility in the common operations of carpentering and cabinet work, together with the use and care of wood working machinery, as lathes, saws, planers, etc. The Course includes instruction in Wood-turning having special application to Pattern-work, an illustrated discussion of the principles of moulding, to explain clearly and show reasons for "Draft" on patterns and methods of allowing it, instruction in the use and making of core-boxes, and methods of building up patterns.

### **103. Machine Work.**

This Course is to train students in the common operations of metal working, as chipping and filing, forging, and machine work, as that done on lathes, drill presses, shapers and milling machines.

### **110. Theoretical Hydraulics.**

PREPARATION: 31.

A Course of three exercises per week during the third year, with the solution of numerous problems, covering the principles of liquid pressure, the flow of water through orifices and

open channels, also through orifices and nozzles, and the losses from friction and other sources. Russell's Hydraulics is used as a text-book.

### **111. Hydraulic Motors.**

PREPARATION: 110.

A series of exercises, mainly recitations, based upon a text-book, so as to embrace the laws of flow in open channels, and of the dynamic pressure and work of water flowing over curved surfaces. The time is principally given, however, to a study of impulse wheels and reaction turbines, with reference to their proper construction, regulation and testing, and to the various sources of loss of energy in their operation.

### **112. Hydraulic and Sanitary Engineering.**

PREPARATION: 110.

This Course treats of the drainage of lands, together with a Course in irrigation, in which are studied the constructions and methods employed in this and other countries, including the arrangement and proportioning of canals, distributaries, falls, regulators and other special works and modes of applying water to the soil. The subject of water supply is taken up, and embraces the study of the quantity of water required for city and town supplies, estimation of the yield from drainage basins, stream flow and ground water flow, and computations to determine the necessary storage to insure a given supply. The student is instructed in the use of hydraulic diagrams and the various methods used in stream gaging. The text-books used are Wilson's Irrigation Engineering, and Swan and Horton's Hydraulic Diagrams.

### **120. Electrical Transmission of Power.**

PREPARATION: 128, 139.

This Course is devoted to a thorough study of the design and construction of modern high tension transmission lines. It is in two sub-divisions, the first dealing with the electrical characteristics of the line, such as: potentials used, size and spacing of conductors, inductive and capacity reactance, skin effect, coronal loss, effect of harmonics, conditions of resonance, effect of high tension lines on neighboring circuits, etc.; the second, covering the parallel problems of rights of way, loca-



tion of poles, towers and conduits, insulation and insulating devices, protective devices against lightning, flash overs, etc., and, in brief, a discussion of the problem of material realization of the line, as previously planned and calculated.

#### **121. Central Stations.**

PREPARATION: 111, 95, 128, 139.

This Course is given to a consideration of the central station for the production of electrical power, by both Steam and Hydraulic prime movers. Very little time is given to the consideration of either steam engines, steam or hydraulic turbines, or electric generators, transformers, etc. The time is taken by a careful discussion of the problems of development of a water power, and location of a steam plant, probable field for consumption of power developed, organization of the plant, design, etc. Particular attention is given to the problems of control, protection of apparatus, and switchboard devices. The Course is in the form of lectures with free use of published descriptions of existing plants, collateral reading, etc.

#### **122 A. Electrical Engineering I, Laboratory and Reports.**

PREPARATION: 126, 128.

This Course of exercises is given throughout the second year, and is devoted to a carefully selected series of experiments intended to exemplify in the simplest manner the use of the voltmeter, ammeter and wattmeter, on the one hand, and on the other, a series of experiments illustrative of the principles developed in the courses on Direct Current Machines and Direct Current Practice. The purpose of this Course being, in part, to develop correct methods of work, it is intended that practically the whole of the preparatory work and working up of results shall be done in the laboratory, under guidance of the instructor, so far as necessary.

#### **122 B. Electrical Engineering II, Laboratory and Reports.**

PREPARATION: 122 A.

In this Course there are two lines of work pursued, first a set of experiments involving the use of instruments and the making of measurements, such as Specific Resistance, Insulation Resistance, Conductivity, use of the Cary Foster Bridge, Hoopes Bridge, Potentiometer, for the calibration of volt-

meters, and ammeters, etc. All through, particular stress is laid on the correct use of apparatus and methods, and precision methods are enforced throughout.

The second line of work is a continuation of the work in No. 122 A, the experiments being in some cases repeated, but the work being pursued now from the quantitative, rather than the qualitative, side. Thus, where in No. 122 A the Prony brake was used merely as a means for loading a motor and observing its action under load, it is here used as a measuring device in obtaining the motor efficiency and its errors and necessary corrections, as such, are studied.

### **122 C. Electrical Engineering III, Laboratory and Reports.**

PREPARATION: 122 B.

This Course is given over to a series of experiments involving advanced Electrical Testing, and in it the student is thrown entirely upon his own resources, a desired result is stated to him, and he is required to plan out his own method, settle upon the apparatus needed, solve his precision requirements, calibrate his instruments, if necessary, and finally turn in a detailed report covering all phases of his work.

### **123. Studies in Electrical Construction.**

PREPARATION: 120, 121.

This Course, which is given in connection with No. 120 and No. 121 consists of visits to plants, manufactories, etc., so far as possible, and written papers by the students upon the various questions involved, together with the reading of the same and their discussion by the class.

### **124. Intercommunicating Telephones.**

PREPARATION: 126.

A Course of lectures in the construction, operation and maintenance of factory intercommunicating telephone sets.

### **126. Elements of Electricity.**

PREPARATION: 10, 20.

This Course of 27 experimental lectures is taken by all students of the School during the first year. In it are discussed the fundamental principles of Magnetism, Electro-statics and Electro-kinetics, the subjects being discussed from the view

point of the most recent hypotheses regarding the nature of Electricity and its modes of manifestation. The text-book used is Kimball's Physics.

### **127. Theoretical Electricity.**

PREPARATION: 126, 128, 129.

This Course, taken during the second year, covers such subjects as the comparison of the Electrostatic and Electro-magnetic systems of measurement, the determination of the absolute units of potential difference, current, and resistance, with their relationship to the various International Units, and other similar matters; a consideration of the transfer of electricity through solid, liquid and gaseous conductors, concluding with a discussion of the Electronic Theory. No one text-book is used.

### **128. Direct Current Machinery.**

PREPARATION: 126, 127.

This Course, which runs parallel with No. 127, returns to the starting point of the inducing of an Electromotive force by motion of a conductor in a magnetic field, and discusses in detail the theory of direct current generators and motors, armature winding, characteristic curves, etc. The text-book is Franklin and Esty; Direct Current Machinery.

### **129. Direct Current Practice.**

PREPARATION: 128.

In this Course, which follows immediately after No. 128, requiring it as preparation, is given some detailed study of the operation of direct current apparatus, the Edison 3-wire system of distribution, storage batteries, and the more important industrial applications of direct current power.

### **130. Technical Electrical Measurements.**

PREPARATION: 128, 129.

This Course, given in the third year, is intended to familiarize the student with the principle types of electrical measuring instruments used in testing, their manner of use, sources of error and necessary precautions to be taken, as well as the leading methods of measuring with precision, the various electrical quantities as,—Resistance, Current, Electromotive force, Capacity, Inductance, Conductivity, etc.

### **131. Wiring and the National Code.**

PREPARATION: 126.

This Course does not pretend at all to teach the student so called "Practical Wiring," but is intended to explain the principles governing the wiring of buildings, to illustrate the leading types of fittings used, and to give a careful survey of the requirements of the National Electrical Code, as promulgated by the Electrical Committee of the National Fire Protection Association, and adopted into their municipal law by all the leading cities and towns of the United States and Canada.

### **132. Illumination and Photometry.**

PREPARATION: 20.

A Course of lectures dealing with the application of electricity to lighting, the principles of illumination, and the laboratory measurement of the various quantities concerned. The text-book used is Wickenden's Illumination and Photometry.

### **133. Electric Railways.**

PREPARATION: 128, 129, 139.

A Course of lectures, including a discussion of the general problem of supplanting steam with electric traction, followed by a discussion of the principle systems of electric traction, namely, Direct Current, high and low voltage, Single Phase Alternating Current systems and Three Phase Alternating Current systems, and a study of the construction, equipment, and cost of operation of existing systems.

### **134. Practical Electricity I.**

PREPARATION: 10, 20, 126.

This Course is given to all students in the Civil and the Mechanical Engineering Courses. The principles of electricity and magnetism discussed in Elementary Electricity are applied in this Course to the solution of practical problems of the two and three wire direct current systems, and to the study of direct current generators and motors. The student will also be instructed in wiring, together with the rules of the National Electrical Code.

### **135. Practical Electrical Laboratory I.**

PREPARATION: 134.

A series of twelve practical experiments illustrating and depending on the problems and principles given in Practical Electricity I. Elementary tests on direct current machines.

### **136. Practical Electricity II.**

PREPARATION: 134, 135.

This is a continuation of Practical Electricity I. The first part of the year will be devoted to a study of storage batteries, photometry, and the general principles of Alternating Current, series and parallel circuits. The last half of the year will be devoted to a study of the various types of Alternating Current Machinery and the application to present day conditions.

### **137. Practical Electrical Laboratory II.**

PREPARATION: 136.

Twelve experiments on the testing of electrical machinery, both direct current and alternating current, also photometry of incandescent lamps.

### **138. Alternating Currents.**

PREPARATION: 128, 129.

This Course concerns itself with the general theory of alternating current circuits, and the application of these principles to various engineering problems. In connection with the work, considerable importance is attached to the solution of problems selected with reference to their engineering application.

### **139. Alternating Current Machinery.**

PREPARATION: 138.

This Course of lectures, recitations and problems, is devoted to a careful discussion of the various types of alternating current machinery for the generation, transmission and distribution of power. The special properties of each machine are considered for the machine as a unit, and when it is used as a part of any electrical system; some of the general considerations concerning long-distance power transmission are also included.

### **139A. Alternating Current Laboratory.**

PREPARATION: 138, 139.

The work includes such tests as efficiency, heating, regulation and determination of characteristics for alternating current machinery. The work in the laboratory is supplemented by conferences.

### **140. Chemistry E I.**

This is an experimental lecture Course covering chemical practice as applied to engineering work. It treats of the gases used in the arts, as hydrogen, oxygen, acetylene, etc.; their preparation, properties and uses, as well as the oxyhydrogen blow pipe, oxy-acetylene blast, etc. Paints, concrete, alloys, corrosion and its preventives, are also dealt with. In addition to this, the work takes up oils, fuels, fuel gases, explosives, glass, mineral insulators, the commonly used acids and bases, etc. The consideration is taken up from the engineer's standpoint, rather than the chemist's.

### **141. Chemistry E II.**

PREPARATION: 140.

This is a continuation of Chemistry E I, in which the consideration of the various subjects is concluded.

### **142. Inorganic Chemistry.**

PREPARATION: 10, 20.

The fundamental principles of the science are taught in connection with the descriptive chemistry of the non-metallic elements. The lectures are designed to precede the work of the laboratory, in which the students are expected to verify and illustrate the principles and facts which have been discussed in the lecture room. Careful manipulation, thoroughness in observation, accuracy in arriving at conclusions, and neatness in note-taking, are required of each student. The Course lays the necessary foundation for subsequent chemical study.

### **143. Qualitative Analysis.**

PREPARATION: 142.

A practical Course in qualitative analysis for the separation and identification of the common metallic elements and the acids. Each student is also required to make a complete and accurate analysis of various mixtures, alloys and chemicals

used in manufacturing. The laboratory work is supplemented by a course of lectures and conferences, devoted to a general study of the properties of the common metals and their compounds.

#### **144. Quantitative Analysis.**

PREPARATION: 142, 143.

A Course in gravimetric and volumetric analysis. Special attention is given to accurate manipulation, the preparation of standard solutions, the calibration of instruments, and to the principles of stoichiometry. The laboratory work is supplemented by a course of lectures and conferences.

#### **145. Organic Chemistry.**

PREPARATION: 144.

A Course devoted to lectures, conferences and laboratory work on the principles of organic chemistry, as illustrated by the methane and benzene derivatives.

The student is required to prepare, in the laboratory, a number of organic compounds, selected to show the characteristic reactions, and to give training in the practical separation and purification of organic substances. After the synthetic work, the students are given a practical course in organic analysis.

#### **146. Industrial Chemistry.**

PREPARATION: 143, 144, 145.

This Course consists of a series of lectures and recitations upon the more important technical chemical processes, including those of Metallurgy. Much attention is given to the general operations common to many industries, such as crushing, grinding, lixiviation, filtration, evaporation, distillation, crystallization, etc., and to the details of various types of apparatus used for carrying on these processes. Some of the more important manufacturing industries, such as the production of alkali, fertilizers, glass, pigments, cement, soap, explosives, paper, as well as wood distillation, the refining of petroleum, etc., are also considered in detail.

#### **146 A. Industrial Chemical Laboratory.**

PREPARATION: 146.

A Course in the quantitative study of the preparation and purification of some chemical product, selected as a type of reac-

tion of industrial importance. The processes employed are carefully controlled and the final product is analyzed to determine its purity. When the work is completed, a careful detailed report of the whole process is made and discussed in class.

#### **147. Metallurgy of Iron.**

A series of lectures taking up a general consideration of the Metallurgy of Iron and Steel. The introductory part is devoted to a discussion of the physical and chemical properties, and the constitution of cast iron, wrought iron and steel. This is followed by a more extended treatment of the production of cast iron, wrought iron, Bessemer, open-hearth, cement and crucible steel, and of foundry work. In the discussion of the different processes, principles of manufacture are made prominent. The heat treatment of steel and alloy steels is gone into in detail.

#### **148. Technical Analysis.**

PREPARATION: 145.

A Course devoted to the following:—

Analysis of gases.

Analysis of oils, mineral and vegetable.

The origin, manufacture, properties, uses and analysis of the various fuels, and the determination of the heat value of fuels by the use of a calorimetric bomb.

#### **149. Theoretical Chemistry.**

PREPARATION: 142, 143, 144.

In this Course the more important principles of Theoretical Chemistry are considered; but these are treated with great thoroughness and are illustrated by applying them to a large variety of problems. The principles are further illustrated by lecture experiments. During the Course the following subjects are considered: pressure volume relations of gases and solutions, derivation of molecular and atomic weights, conductivity of solutions, ionic theory and mass action law, effect of temperature on chemical equilibrium, the laws of energy with reference to the production of heat and work, the electro-motive force of voltaic cells and other electro-chemical topics.



### **160. Dynamical and Structural Geology.**

This Course treats of earth movements and the various terrestrial applications of solar energy. The more important geological processes, erosion, sedimentation, deformation and eruption are taken up and discussed.

The latter part of the Course is devoted to lectures on the broader structural features of the earth's crust and the application of the principles of structural geology to practical engineering problems.

### **161. Lithology.**

This Course is a laboratory study of the rock-forming minerals and the more common rocks.

### **170. German I.**

This Course is planned to give the student a knowledge of German grammar, as well as a working vocabulary of scientific terms. During the Course, easy scientific reading is begun.

### **171. German II.**

PREPARATION: 170.

A continuation of German I, in which the student is given full opportunity to extend his vocabulary of technical words, as well as to become familiar with technical books and scientific articles in the current German periodicals.

## EQUIPMENT

The School is now housed in the new building of the Association, and has very exceptionally equipped quarters for carrying on the work of the Engineering Courses.

### MECHANICAL DEPARTMENT

#### Mechanical Laboratories

Through the courtesy of the Massachusetts Institute of Technology officials, and also those of the Franklin Union, we are able to avail ourselves of the unexcelled Mechanical Engineering Laboratories of those Institutions for instruction purposes in the laboratory Courses of the Co-Operative School.

In addition to the foregoing facilities, we have several engines of our own for use for instruction, as well as the most modern equipment for gas and fuel analysis.

Before the Laboratory Courses commence for the year 1914-1915, our present steam engineering plant will be completely equipped with meters, scales, indicators, and all the necessary accessory equipment for making complete boiler tests, and determining the efficiencies of the various appliances used in generating power, heat, and light for our new building. This will place at the disposal of our classes a perfectly equipped, up-to-date, engineering department, and give them the means of carrying on boiler tests, determining the efficiencies of various fuels and oils, taking indicator diagrams, determining the efficiency of modern reciprocating engines and turbines when direct connected to generators, as well as render them familiar with all the various auxiliary appliances of such a plant, as condensers, pumps, air compressors, etc. The students also have the use of the equipment of our Automobile School, thus giving opportunity to study the most advanced ideas in gasoline engine practice.

### MECHANIC ARTS LABORATORIES

There are at present two laboratories, one for metal work and the other for wood working and pattern work, which are available for the use of our students.



DETERMINING THE CANDLE POWER OF GAS  
 Everett Works  
 Boston Consolidated Gas Co.



MAKING A HIGH POTENTIAL TEST ON A CONCENTRIC FEEDER  
 Chatham Street Substation

The metal working laboratory is well equipped, and affords the student an opportunity for work with various machines, as: lathes, shapers, drill presses and milling machines. There are also a gas forge and brazing furnace, together with all the required equipment for bench work instruction.

The wood working laboratory has a power band saw, lathes, and all the necessary equipment for wood working and pattern work, and as this catalog goes to press, arrangements are being made for the addition of a Universal circular saw and buzz planer to the present equipment.

In addition to the foregoing, a small, but completely equipped, shop for the construction and repair of apparatus, and for the use of students in connection with their thesis work has been installed. This shop is equipped with a metal and wood working lathe, grinder and all the necessary wood and metal working tools. There is also a very complete set of cabinet worker's tools for use in wood working.

## **CIVIL ENGINEERING DEPARTMENT**

### **Field Instruments**

For work in the field, the Department possesses various surveying instruments, representing the principal makes and types of instruments in general use. The equipment includes transits, levels, compasses, a complete plane table outfit, Locke hand level, flag poles, leveling rods, stadia rod, engineers' and surveyors' chains, steel and cloth tapes and other accessories. For Higher Surveying, an Aneroid Barometer is used for barometric leveling, and the transits are equipped with neutral glasses and reflectors for astronomical observations.

This year a sextant, reading to ten seconds, and equipped with neutral glasses and telescopes, has been added to the equipment.

The scope of the equipment and the fieldwork itself are designed to train the student's judgment as to the relative merits of the various types of field instruments.

### **Design and Drafting Rooms**

The school possesses large, light and well equipped drawing rooms for the carrying on of the designing and drafting, which

form so important a part of civil engineering work. These rooms are supplied with lockers containing the drawing supplies, and files containing blue prints and photographs of structures that represent the best practice. Many of the prints and photographs are of structures erected in and about Boston.

## ELECTRICAL ENGINEERING DEPARTMENT

The Electrical Laboratory is well equipped with apparatus for teaching the principles of measurements, and the equipment is being steadily increased and developed for the doing of work of a higher degree of precision. Among the special pieces of apparatus may be mentioned the following: Cary Foster Bridge, a modified form of Hoopes Conductivity Bridge, a Laboratory Wheatstone Bridge, a Leeds Northrup Potentiometer with Volt box, standard cells and low resistance standards, an accurate Chemical Balance and other appliances for the close determination of currents, resistances and potential differences.

There has been added this year, a set of variable inductances, and a set of condensers to the amount of eighty microfarads capacity variable in steps of one tenth microfarad each.

Among the instruments for testing purposes, for alternating current work, may be mentioned the following: Three matched voltmeters and three General Electric Type P-3 Iron clad wattmeters arranged for Y connection, six other voltmeters of various ranges, potential transformers, nine ammeters some with current transformers, three integrating meters, one General Electric and one Westinghouse polyphase, switchboard type, integrating wattmeters and a High Torque General Electric test meter. There is also a considerable and increasing assortment of auxiliary testing apparatus, such as synchronism indicators, power factor indicators, frequency indicators, etc.

For direct current testing, there is a large and increasing collection of Weston instruments, both voltmeters and ammeters, of suitable ranges and grades of precision, while the measurement of unusual currents and voltages is ensured by three Weston millivoltmeters with an assortment of standard

shunts and multiplying resistances of various orders of magnitude.

There is also the usual assortment of testing devices, such as speed indicators, tachometers, brakes, loading resistances and the numerous minor pieces of apparatus needed in practical testing and operating of electrical machinery.

Among the machines of this Department, are a pair of specially made, matched machines arranged to run as single phase, two, or three, phase generators, or motors, as well as synchronous transformers, double current generators, or on the Direct Current side as shunt, series, or compound, generators, either two or three wire, or as motors.

There are also a 15 horse power 230-volt Westinghouse motor, a new General Electric 10 horse power Interpole 230-volt motor, a 500-volt generator, two 500-volt series, and several 500-volt shunt motors, and a series parallel controller.

A 45 K. V. A., 60-cycle, single phase, 500-volt generator giving a practically pure sine wave, three General Electric Type H transformers of 5 K. V. A. capacity, a  $7\frac{1}{2}$  K. V. A. special General Electric 60-cycle 250-volt alternator, with revolving field tapped for either 1, 2, 3 (star or mesh connection) 6 or 12 phase connection, which may be operated (by the substitution of special rotors) also as a synchronous, or induction motor, or a frequency changer. It is intended, in the near future, to add a duplicate of this machine with another interpole motor to drive it, thus obtaining a matched pair of machines, which, with the transformers, will enable a very wide range of alternating current experimentation to be carried out.

There is also available for advanced instruction, in co-operation with the Mechanical Department, the four three-wire generators (two driven by reciprocating engines and two by Westinghouse-Parsons turbines) in the main generating plant of the Association.

## DEPARTMENT OF PHYSICS

There is a large laboratory devoted entirely to Physics together with a lecture room.

This year the Physics Department has been very completely equipped with all necessary apparatus for the experimental

work that is required of the students, as well as that required for lecture demonstration. Among other things, have been added: verniers, levels, spherometers, calorimeters, thermometers, pyrometers, a spectroscope, a microscope, a spectrometer, balances, standard gram weight, lecture table galvanometer, optical disk with all accessories, lenses, photometer, a full set of Weather Bureau apparatus including a barograph, thermograph, hygrometer, barometer, maximum and minimum thermometers, etc. These, in addition to the equipment already owned, give a wide range to the experimental work that can be done.

In addition to the foregoing we are preparing to add a large number of new pieces of apparatus, for work in mechanics, heat, and light, and at the time of going to press are getting out specifications so that they may be built for use next year.

## DEPARTMENT OF CHEMISTRY

This Department is completely equipped in all respects for carrying on all lines of Chemical work, from that of a High School to that of most advanced College grade. The three laboratories, with accommodations for over one hundred and fifty students, are very exceptionally furnished with all the necessary appliances for chemical work. Some of these are: hoods, drying closets, still, steam and hot water baths, electrolytic circuits, vacuum and pressure apparatus, balances, combustion furnaces, complete sets of apparatus for the sampling and analysis of flue gases and fuels. There are also testing machines for oils, viscosimeters, and different sorts of flash point apparatus. A chemical museum is connected with this Department where are kept specimens for purposes of illustration.

## LIBRARIES

There is in connection with the School a professional library containing books pertaining to both the school work of the boys and to their practical work. In addition to this there also are current periodicals on engineering and scientific subjects for their exclusive use. All members of the School are entitled to take books from the Boston Public Library,

and this offers a very unusual opportunity to our non-resident students,

### DEPARTMENT OF PHYSICAL TRAINING

Our new gymnasium with all the latest modern equipment gives ample accommodation for all students.

There is a running track on the grounds adjoining, together with tennis and hand ball courts; also a large natatorium where swimming is taught by competent instructors.

In connection with this Department, there are also six excellent bowling alleys, which may be used by the students upon the payment of a nominal fee.

For all further information, write

MR. FRANK PALMER SPEARE, *Director of Education*,  
316 Huntington Avenue,  
Boston, Mass.



THE CO-OPERATIVE ENGINEERING SCHOOL  
Boston Young Men's Christian Association

Boston, Mass.....19

To the Dean:

I,....., hereby respectfully  
apply for admission to the..... Engineering Course  
of the Co-Operative Engineering School for the school year 19 -  
19 , and submit the following statement:

Name in full.....Age.....

Residence .....St.....City, or Town

State.....Tel.....

Parent's (father's) name.....

“ “ address.....

Graduate of.....Grammar School.....

Graduate of.....High School. Year.....

If not a graduate, how many years were you in High School?.....

When did you leave?.....

Why did you leave?.....

Name of principal.....

If employed since graduation, what is name of employer?.....

.....

Employer's address.....

Names and address of two other persons to whom we may direct inquiries

concerning you.....

.....

.....

.....

Do you plan to complete the full four years' course? .....

When do you desire to start work?.....

With what firm would you prefer employment?.....

## Remarks

## GENERAL DEPARTMENTS

### DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B. P. E. Director

*The Physical Department* is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency, through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic and Educational Gymnas-tics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts.

### DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced de-velopment and attain a spiritual foundation for successful life work, the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups and The Twenty-Four-Hour-A-Day Club.

### DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportuni-ties in the Association for social service, and the following social features.

A Newly Equipped Game Room.      The Popular Novel Club.

The Association Congress.      The Land and Water Club.

Popular Social Evenings.

### DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

*The Employment Department* is, in actual practice, a clear-ing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

### BOYS' DEPARTMENT

DON S. GATES, A.B., City Secretary

The physical, social, employment and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men, as stated above. Membership dues for the boys range from one to six dollars, according to the priv-ileges desired.



# THE EVENING POLYTECHNIC SCHOOL

CATALOG  
1915-1916



EVENING COLLEGE COURSES

PUBLISHED BY THE  
DEPARTMENT OF EDUCATION  
OF THE  
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION  
316 HUNTINGTON AVENUE  
BOSTON, MASS.

# **DEPARTMENT OF EDUCATION**

## **BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION**

### **EVENING LAW SCHOOL**

#### **Evening Sessions Only**

Established in 1898; incorporated in 1904. Provides a four years' course in preparation for the Bar and grants the Degree of Bachelor of Laws.

### **SCHOOL OF BUSINESS**

#### **Day and Evening Sessions**

Offers all of the courses of the regular Business School program, and additional cultural courses, preparing for business and admission to our School of Commerce and Finance.

### **SCHOOL OF COMMERCE AND FINANCE**

#### **Evening Sessions**

Established 1907; incorporated 1911. Offers the following four-year courses leading to the degree of B.C.S. (Bachelor of Commercial Science): Banking, Business Administration, Finance and Bond Salesmanship, and Professional Accountancy. Anyone passing the examination for advanced standing, is enabled to complete any one of the four regular courses and secure the degree in three years. Special courses in addition to regular courses.

### **PREPARATORY SCHOOL**

#### **Evening Sessions**

A school of high school grade to prepare students for Colleges, Scientific Schools, West Point, Annapolis, Lowell School for Industrial Foremen, and the classified Civil Service.

### **HUNTINGTON SCHOOL**

#### **Day Sessions**

A high-grade school, consisting of a Grammar Department (5th, 6th, 7th and 8th grades), a Preparatory Department, fitting for the Colleges, Medical and Dental Schools, Massachusetts Institute of Technology, Annapolis, West Point, Lowell School for Industrial Foremen, Law Schools and the classified Civil Service, and a Technical Department, fitting for positions along engineering lines.

### **CO-OPERATIVE ENGINEERING SCHOOL**

#### **Day Sessions**

Four years' courses of college grade in Chemistry, Mechanical and Civil Engineering, etc., in co-operation with business firms. Students earn while learning. Open to High School graduates.

### **AUTOMOBILE SCHOOL**

#### **Day and Evening Sessions**

Deals with the construction, care, repair and operation of all types of gasoline vehicles; a large staff of teachers; ample equipment and garage.

For further information concerning any of the above schools, or departments, address the Director of Education.

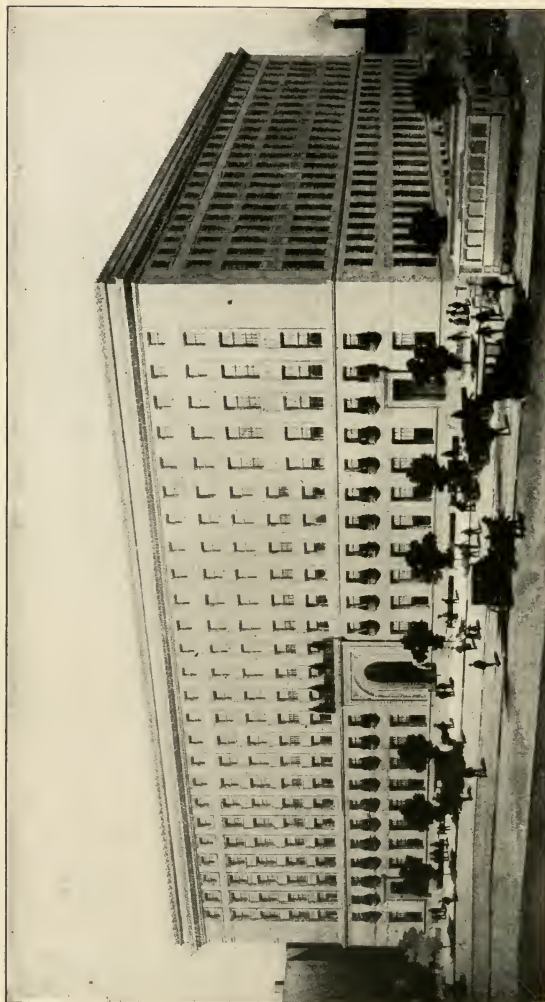
FRANK PALMER SPEARE,  
316 Huntington Avenue,  
Boston, Mass.

CATALOG  
OF THE  
EVENING POLYTECHNIC  
SCHOOL

1915-1916



PUBLISHED BY THE  
DEPARTMENT OF EDUCATION  
OF THE  
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION



### THE ASSOCIATION BUILDING

This is a picture of the Association Building which was finished in the Fall of 1913. It contains among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, library and reading room, camera club rooms, social and recreative rooms, and auditorium.



# Calendar

1915-1916

Sept. 14-18	Registration
Sept. 20	Opening of school
Oct. 12	Columbus Day, Holiday
Nov. 25	Thanksgiving Day, Holiday
Dec. 20-25	Christmas Recess
Feb. 22	Washington's Birthday, Holiday
April 8	Close of school

# Officers of Administration

## General Administrative Officers

ARTHUR S. JOHNSON, *President*

ALBERT H. CURTIS, *Vice-President*

GEO. W. BRAINARD, *Recording Secretary*

LEWIS A. CROSSETT, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*

## Educational Committee

WILLIAM E. MURDOCK

ALBERT H. CURTIS

WM. C. CHICK

MORGAN L. COOLEY

GEORGE H. MARTIN

## Educational Administrative Officers

FRANK P. SPEARE, *Director of Education*

GALEN D. LIGHT, *Asst. Director of Educ. and Bursar*

WALTER G. HILL, *Asst. Bursar*

CHARLES B. GRAY, *Secretary*

ERNEST H. BROOKE, *Registrar*

F. L. DAWSON, *Field Secretary*

# Officers of Instruction

THOMAS E. PENARD, S.B., *Mass. Inst. Tech.*  
DEAN

H. H. AMBLER, S.B.  
*Structural Engineering*

JAMES BROUGH  
*Freehand Drawing and Industrial Design*

LOREN N. DOWNS, JR., S.B.  
*Electrical Engineering*

CARL S. ELL, S.B., M.S.  
*Structural Engineering*

C. A. FARWELL, S.B.  
*Structural Engineering*

FRED G. HARTWELL  
*Electrical Practice and Construction*

JOHN W. HOWARD, S.B.  
*Surveying*

H. C. MABBOTT, S.B.  
*Mechanical Engineering*

EDWARD MUELLER, A.B., PH.D.  
*Chemistry*

THOMAS E. PENARD, S.B.  
*Mathematics*

M. F. PINKHAM  
*Mathematics*

CHARLES H. RESTALL, S.B.  
*Railroad Engineering*

O. R. SCHURIG, S.B.  
*Electrical Engineering*

E. W. G. SMITH  
*Mechanical Drawing*

R. E. SMITH  
*Electrical Practice and Construction*

W. LINCOLN SMITH, S.B.  
*Electrical Engineering*

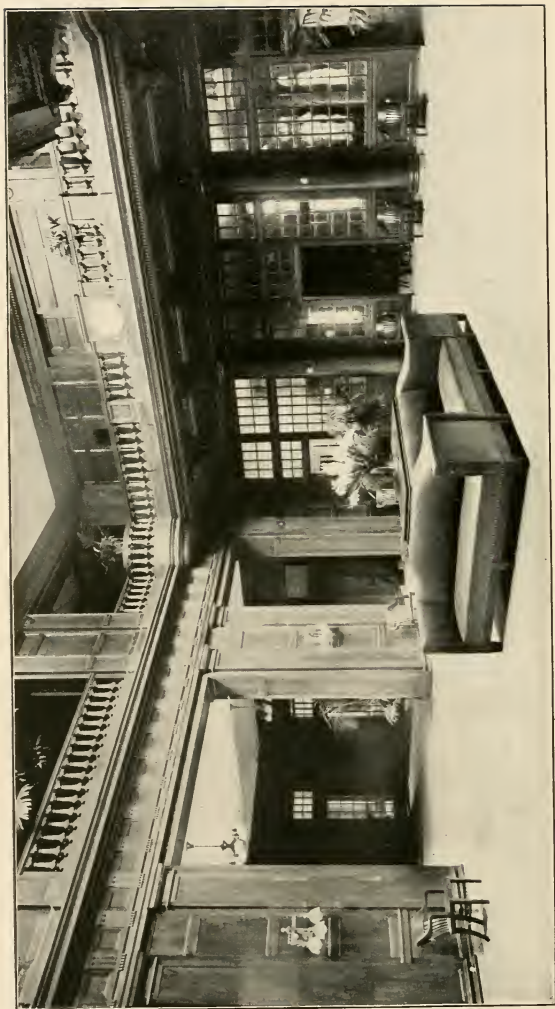
ELLWOOD B. SPEAR, A.B., PH.D.  
*Chemistry*

SAMUEL A. S. STRAHAN  
*Chemistry*

GEORGE A. TRUELSON  
*Architecture*

P. A. WAKEMAN  
*Electrical Practice and Construction*

W. F. WILLMANN  
*Mechanical Drawing*



MAIN LOBBY

## Foreword.

Many men employed in engineering and other work of a technical nature, feel the need of special instruction but cannot afford to take the time to attend the regular technical day schools. To such men the Evening Polytechnic School offers a large number of special courses, and to those who are willing to give three evenings per week for a period of from three to five years the school offers several regular courses of very high grade which compare favorably with similar courses given in the good technical schools of the country.

The courses offered in this school are with a very few exceptions of college grade, so that the graduates will find themselves trained to meet the problems arising in engineering practice. They are sufficiently well equipped to hold important positions, and acquit themselves creditably.

On the following pages will be found a complete description of the regular and special courses, requirements for admission, rates of tuition and other general information.

# Courses of Study

## Regular Courses

- I.—Chemistry and Chemical Engineering
- II.—Electrical Engineering
- III.—Structural Engineering
- IV.—Railroad Engineering
- V.—Municipal Engineering

## Schedule of Subjects

No.	Course	No. Weeks	Evenings	Time
1	Mathematics P	28	Mon., Fri. Sect. A	7.00-7.45
			Sect. B	7.45-8.30
2	Mathematics I	28	Mon., Fri. Sect. A	7.00-7.45
			Sect. B	8.30-9.30
3	Mathematics II	28	Mon., Fri. Sect. A	7.00-7.45
			Sect. B	8.30-9.30
10	Mechanical Drawing P	6	Wed. (or Thurs.)	7.00-9.30
11	Adv. Mech. Drawing and Orthographic Projections	28	Wed.	7.00-9.30
12	Machine Drawing	28	Wed., Fri.	7.00-9.30
20	Architectural Drawing I	28	Mon., Fri.	7.00-9.00
21	Architectural Drawing II	28	Mon., Fri.	7.00-9.00
22	Architectural Drawing III	28	Mon., Fri.	7.00-9.00
30	Freehand Drawing I	28	Tues., Sat.	7.30-9.30
31	Freehand Drawing II	28	Tues., Sat.	7.30-9.30
33	Industrial Design	28	Tues., Sat.	7.30-9.30
38	Life Class	28	Tues., Sat.	7.30-9.30
40	Inorganic Chemistry Lect.	28	Mon., Fri.	7.00-7.45
41	Inorganic Chemistry Lab.	28	Wed.	7.00-9.30
42	Qualitative Analysis	28	Mon., Tues.	A
43	Volumetric Analysis	14	Mon., Tues.	A
44	Gravimetric Analysis	14	Mon., Tues., Wed.	A
45	Organic Chemistry	28	Mon., Tues., Wed.	A
46	Technical Analysis	28	Mon.	A
47	Theoretical Chemistry I	28	Wed.	8.30-9.30
48	Theoretical Chemistry II	28	Fri.	7.00-7.45
49	Industrial Chemistry	28	Mon.	7.45-8.30
60	Practical Electricity	28	Mon., Fri.	7.00-7.45
61	Practical Electricity, Lab.	28	Wed. (or Thurs.)	7.00-9.30
62	Elem. of Elect. Engineering; Direct Currents	28	Mon., Fri.	7.45-9.30
63	Elect. Engineering, Lab., Direct Currents	28	Thurs.	7.00-9.30

No.	Course	No. Weeks	Evenings	Time
64	Elem. of Elect. Engineering; Alternating Currents	28	Mon.	8.00-9.30
65	Elect. Engineering, Lab. Alternating Currents	5	Fri.	7.00-9.30
66	Technical Elect. Measurements	28	Mon.	7.00-8.00
67	Tech. Elec. Measurements, Lab.	23	Fri.	7.00-9.30
68	Adv. Alternating Currents	28	Mon.	7.00-8.00
69	Elec. Eng., Lab.; Advanced	28	Thurs.	7.00-9.30
70	Electricity Supply Stations	28	Fri.	7.00-7.45
71	Power Transmission	14	Mon.	8.00-9.30
72	Electric Railways	14	Mon.	8.00-9.30
78	Thesis	28	Fri.	8.00-9.30
80	Heat Engineering	28	Thurs.	8.30-9.30
100	Practical Physics	28	Mon., Fri.	8.30-9.30
110	Structural Drawing	28	Wed.	7.00-9.30
111	Structural Design	28	Wed.	7.00-9.30
112	Bridge Design	28	Wed.	7.00-9.30
113	Structural Mechanics	28	Mon., Fri.	7.00-8.30
114	Theory of Structures	28	Mon., Fri.	7.00-8.15
115	Strength of Materials	28	Mon., Fri.	8.15-9.30
116	Advanced Structures	28	Mon., Fri.	7.00-8.30
117	Concrete Construction	28	Mon., Fri.	8.15-9.30
130	Topographical Drawing	20	Tues.	7.00-9.30
131	Surveying and Plotting	28	Mon., Fri.	7.00-8.30
135	Materials of Construction	28	Wed.	7.00-8.30
140	Foundations	8	Thurs.	7.00-8.30
145	Highway Engineering	8	Tues.	7.00-9.30
150	Hydraulic Engineering	28	Thurs.	8.30-9.30
151	Hydraulic Motors	28	Thurs.	7.00-8.30
155	Sanitary Engineering	28	Mon., Thurs.	7.00-8.30
160	Municipal Eng. Problems	28	Thurs.	7.00-8.30
165	Railroad Engineering	28	Mon., Fri.	7.00-8.30
170	Applied Mechanics	20	Mon., Fri.	7.00-8.15
180	English P	28	Mon.	7.00-8.30
185	German I	28	Wed.	7.00-7.45
186	German II	28	Wed.	7.45-8.30

A. Hours of instruction will be announced at opening of school.

Note: For prices see schedule of rates, page 47.

## COURSES OF STUDY

### Preparatory Year

The courses of study in the preparatory year are designed for students who are not sufficiently equipped to take up the first year work of the regular courses. Students who have satisfactorily completed these subjects elsewhere will not be required to take them again, but may enter the first year at once.

#### Subjects:

Mathematics P	1
Mechanical Drawing P	10*
English P	180

\*High School students who have covered most of the work, but who are deficient in Mechanical Drawing will be admitted to the regular courses under condition that the work in Mechanical Drawing be made up at some time during the first two years,—preferably during the first year.

Note: For hours of instruction see schedule of subjects on pages 8 and 9.

For descriptions of courses see pages 17 to 40.



## COURSES OF STUDY

### I. Chemistry and Chemical Engineering

#### Preparatory Year

See page 10

#### First Year

Mathematics I	2
Practical Physics	100
Inorganic Chemistry, Lectures and Recitations	40
Inorganic Chemistry, Laboratory	41

#### Second Year

Mathematics II	3
Qualitative Analysis, Lectures and Recitations	42
Qualitative Analysis, Laboratory	42

#### Third Year

Volumetric Analysis	43
Gravimetric Analysis	44
German I	185

#### Fourth Year

Organic Chemistry, Lectures	45
Organic Chemistry, Laboratory	45
Theoretical Chemistry I	47
German II	186

#### Fifth Year—For Chemical Engineering Students Only

Technical Analysis	46
Theoretical Chemistry II	48
Industrial Chemistry	49
Heat Engineering	80
Practical Electricity	60

Note: For hours of instruction see schedule of subjects on pages 8 and 9  
For descriptions of courses see pages 17 to 40.

## COURSES OF STUDY

### II. Electrical Engineering

#### Preparatory Year

See page 10

#### First Year

Mathematics I	2
Practical Physics	100
Practical Electricity, Lectures and Recitations	60
Practical Electricity, Laboratory	61

#### Second Year

Mathematics II	3
Elements of Electrical Engineering, Direct Currents, Lectures and Recitations	62
Electrical Engineering, Laboratory, Direct Currents	63

#### Third Year

Elements of Electrical Engineering, Alternating Currents, Lectures and Recitations	64
Electrical Engineering, Laboratory, Alternating Currents	65
Technical Electrical Measurements	66
Technical Electrical Measurements, Laboratory	67
Hydraulic Motors	151
Heat Engineering	80

#### Fourth Year—To be omitted during 1915-1916

Advanced Alternating Currents	68
Electrical Engineering, Laboratory, Advanced	69
Electricity Supply Stations	70
Power Transmission	71
Electric Railways	72
Thesis	78

Note: For hours of instruction see schedule of subjects on pages 8 and 9.

For descriptions of courses see pages 17 to 40.

## COURSES OF STUDY

### III. Structural Engineering

#### Preparatory Year

See page 10

#### First Year

Mathematics I	2
Practical Physics	100
Advanced Mechanical Drawing and Orthographic Projections	11

#### Second Year

Mathematics II	3
Structural Mechanics	113
Structural Drawing	110

#### Third Year

Theory of Structures	114
Strength of Materials	115
Structural Design	111

#### Fourth Year—To be omitted during 1915-16

Advanced Structures	116
Bridge Design	112
Concrete Construction	117

Note: For hours of instruction see schedule of subjects on pages 8 and 9  
For descriptions of courses see pages 17 to 40.

## COURSES OF STUDY

### IV. Railroad Engineering

#### Preparatory Year

See page 10

#### First Year

Mathematics I	2
Practical Physics	100
Advanced Mechanical Drawing and Orthographic Projections	11

#### Second Year

Mathematics II	3
Surveying and Plotting	131
Topographical Drawing	130
Highway Engineering	145

#### Third Year

Applied Mechanics	170
Materials of Construction	135
Concrete Construction	117

#### Fourth Year—To be omitted during 1915-16

Railroad Engineering	165
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Note: For hours of instruction see schedule of subjects on pages 8 and 9.  
For descriptions of courses see pages 17 to 40.

## COURSES OF STUDY

### V. Municipal Engineering

#### Preparatory Year

See page 10

#### First Year

Mathematics I	2
Practical Physics	100
Advanced Mechanical Drawing and Orthographic Projections	11

#### Second Year

Mathematics II	3
Surveying and Plotting	131
Topographical Drawing	130
Highway Engineering	145

#### Third Year

Applied Mechanics	170
Materials of Construction	135
Concrete Construction	117

#### Fourth Year—To be omitted during 1915-16

Sanitary Engineering	155
Foundations	140
Hydraulic Engineering	150
Practical Electricity	60
Municipal Engineering Problems	160

Note: For hours of instruction see schedule of subjects on pages 8 and 9.  
For descriptions of courses see pages 17 to 40.



REFERENCE LIBRARY



DRAFTING ROOM

## DEPARTMENT OF MATHEMATICS

DIRECTOR: THOMAS E. PENARD, S.B.

INSTRUCTOR: MR. M. F. PINKHAM

The importance of mathematics as a means of mental discipline, and as a necessary basis for those intending to pursue engineering as a profession, cannot be overestimated.

Students taking the regular courses in Chemistry and Engineering are given two years instruction in applied mathematics, as outlined in Mathematics I and II. Special attention is called to these two courses in practical mathematics, which are intended to cover the field in so far as mathematics is ordinarily employed in the usual engineering computations. They are designed primarily for students taking the regular engineering courses, but may be taken to advantage by those regularly employed in engineering work who wish to obtain a more thorough grasp of applied mathematics.

Courses in advanced applied mathematics will be given provided a sufficient number of men apply to form a class.

### 1. Mathematics P.

Preparation: Arithmetic.

This course, of two periods per week during the preparatory year, is designed primarily for students taking the regular engineering courses; it is hoped, however, that it will be found adapted to the needs of others who wish to obtain a practical knowledge of elementary mathematics. The student is assumed to be thoroughly familiar with the fundamental operations of arithmetic. It includes:

Review arithmetic.

Algebra, including definitions and notation, fundamental operations, factoring, fractions, simple equations, powers and roots, ratio and proportion, variation, with applications to problems chosen from electricity and mechanics, formulas.

Geometry, including useful theorems relating to plane figures, measurements of triangle, polygons, circle, polyhedrons, cylinder, cone and sphere.

## 2. Mathematics I.

Preparation: Mathematics P (1), or equivalent.

This course of two periods per week during the first year, is a continuation of Mathematics I. It includes:

Review Algebra and Geometry.

Logarithms, the use of slide rules, discussion of precision and rules for significant figures.

Trigonometry including circular measure, co-ordinates, trigonometric ratios, formulas, law of sines, law of cosines, solution of right and oblique triangles, applications to problems in Physics and Engineering.

## 3. Mathematics II.

Preparation: Mathematics II (2), or equivalent.

This course of two periods per week during the second year is a continuation of Mathematics II. It includes:

Plotting of functions, interpolation, the straight line, curves represented by various equations, graphic solution of equations, determination of laws from the data of experiments, simplification of formulas.

Rate of increase differentiation, determination of maxima and minima by differentiation, integration, definite integrals, determination of mean value, area and volume by integration, centre of gravity, moment of inertia, partial differentiation.

**Analytic Geometry and Calculus.**

See Mathematics II

## DEPARTMENT OF DRAWING

INSTRUCTORS: MR. JAMES BROUGH, MR. E. W. G. SMITH, MR. GEORGE A. TRUELSON, MR. W. F. WILLMANN

The courses in Mechanical and Architectural Drawing, as outlined, afford the essentials of drafting for those contemplating office work and are equally valuable and necessary to those working in the allied trades.

The art courses are varied and the work is thorough and complete, and of a high order. Great care is taken to develop



the student along the line of his natural inclinations, and, so far as possible, to have the work of the school bear directly upon his daily employment and other courses attended.

#### **10. Mechanical Drawing P.**

This course consists of work in the drawing room, occupying one evening a week throughout the entire first year. The drawing is of an elementary character, beginning with instruction in the use of instruments and the fundamental rules for executing engineering drawings. In conjunction with the drawing, the elementary principles of orthographic projections are studied, and the student prepares a number of plates illustrating the reproduction of objects in the shape of working drawings.

#### **11. Advanced Mechanical Drawing and Orthographic Projections.**

This course is a continuation of the work taken up during the preparatory year, see (4). It includes:

Problems on the point, line and plane; projections of solids; single and double curved surfaces and their intersections by oblique planes; and practical illustrations of the principles studied.

#### **12. Machine Drawing.**

The aim of the course is to teach the proper way of making the necessary dimensioned drawings for use in practice. The instruction includes: (*a*) The making of sketches of the parts of a machine from measurements; (*b*) the detail scale drawing from the sketches and a tracing; (*c*) an assembly drawing of the machine.

#### **20. Architectural Drawing I. MR. TRUELSON.**

An elementary course, including the fundamental principles underlying all kinds of mechanical and architectural drawing: geometrical problems; orthographic and isometric projections; classical mouldings; Roman alphabet, and roof problems.

In connection with this course the instructor will outline a course of reading in architectural history.

**21. Architectural Drawing II. MR. TRUELSON.**

The orders of Architecture. Practical architecture and details of construction. In this course the student is taught the component parts of buildings. Typical details of construction are drawn to a large scale and in isometric projection.

**22. Architectural Drawing III. MR. TRUELSON.**

This course covers the making of complete plans, elevations and working drawings of some elementary problem.

*Special Students*

Students desiring special work in Architectural Drawing, not outlined above, should consult with the instructor.

**30 and 31. Freehand Drawing. MR. BROUGH.**

Considering the great importance of the study of freehand drawing to all who are engaged in, or anticipate being engaged in any industrial art, artistic trade or profession, we offer a very complete course in this line, and call attention to the splendid advantages provided.

The work is adapted to the requirements of each individual student, so far as is practical and consistent with a thorough training in freehand drawing. There are two classes in both freehand drawing and industrial design.

9. Class I. The work of this class is intended to meet the wants of those students who have no previous knowledge of freehand drawing and is recommended to all students who intend to become craftsmen, designers, architects or artists, and also to others who may wish to take up the study as an accomplishment. The work will consist of drawing from typical models, by which students learn a sense of proportion and the principles of perspective; groups of still life for the study of composition and color; also drawing of historic ornament, and details of the human figure from the cast, by which students are taught to observe form, and the principles of light and shade.

10. Class II. The course of study in this class is of a more

advanced nature than that of Class I, and in addition to the more complicated forms of ornament, the full-length human figure from the antique is added, also rendering in pen and ink and pencil, advanced shading in charcoal, painting groups of still life in monochrome and polychrome, in oil and water colors.

### **35. Industrial Design and Interior Decoration. MR. BROUGH.**

The courses in industrial design and interior decoration are specially helpful to those students who are already engaged in, or anticipate being engaged in such arts and crafts, as wood and stone carving, wrought and bent-iron work, brass and copper work, stained glass, furniture and drapery, interior decoration, book covers, wall paper, fabrics and other allied industrial arts, including lettering and commercial designing for advertising purposes. No limitation is placed upon the student who shows ability to take up the work prescribed for the class he wishes to enter, and students who so desire may spend part of their time in the freehand class and part in the industrial design and interior decoration class, without extra charge. The instructor is a certified art master and one of the leaders of the profession. Students in industrial design are recommended to take architecture.

**Class I.** The studies in this class include the work of the freehand drawing in Class I, with the addition of special studies given for the purpose of design, such as a systematic study of the various styles of historic ornament, studies of animal and plant form, and the elementary principles of design.

**Class II.** Students who have an elementary knowledge of drawing and design are considered eligible for this class and are taught the more advanced principles of composition, form and color in design, also rendering the same in various mediums, including charcoal, pencil, pen and ink, water and oil colors.

Our special library can be consulted by the students in these classes.

### **38. Life Class. MR. BROUGH.**

At the repeated request of a number of advanced students we offer this class which will give an exceptional opportunity to students who wish to pursue their studies for the purpose of

acquiring a more perfect knowledge of the figure, and will be of great advantage to those who wish to become more proficient in this branch of art. At the present time the use of the figure is introduced into nearly every form of art work, not only in a purely artistic sense, but also in many forms of commercial work, and to be able to draw the figure well is a great achievement to the artist and designer.

**Structural Drawing.** See Dept. of Structural Engineering.

**Topographical Drawing.** “ “ “ “

## DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING

**DIRECTOR:** ELLWOOD B. SPEAR, A.B., Ph.D.

**INSTRUCTORS:** EDWARD MUELLER, S.B., Ph.D. AND ASSISTANTS

The wonderful advance in the application of science to the arts during the past few years has caused a great demand for technically trained men. Nearly every large manufacturing concern now employs chemists regularly, or else has experts whom it can consult at short notice. The scientific and technical schools are each year sending out large classes of young men, especially trained to meet this demand. For a young man to acquire this education requires four years at a scientific, or technical school, in addition to the four years necessary for preparation at the secondary school, and an outlay of from two to three thousand dollars. These necessary expenditures of time and money are such that many young men, who are mentally capable of taking such courses, are obliged to give up their ambitions and fill inferior positions.

Formerly the practical knowledge which young men acquired by contact with their work was sufficient, but today the degree of specialization is such that a theoretical knowledge is essential to success in many industries where chemical processes are utilized.

There are many men who, by close application to the practical side, have acquired responsible positions in technical industries, but are unfamiliar with the theoretical side of their chosen work.

Such men are unable to advance in their special lines, because they cannot read the many valuable books written on special technical subjects, which presuppose a general knowledge of the theory of chemistry.

At the present time, the requirements of admission to the higher institutions of learning, even for special students, are such that the doors are practically closed to these men, although many of them could take special courses with profit. Again the only available hours for such men are during the evening. There is a demand, therefore, for a systematic evening course in chemistry, which will be open to men engaged at the present time in technical industries.

### Regular Students

The school offers a thorough four-year course in the general principles and applications of inorganic, organic and analytical chemistry, sufficiently complete to enable students to pursue their work with intelligence; to correlate theory and practice; to read technical works with profit; to test the quality and purity of chemicals and to become familiar with the laboratory methods of the trained chemist.

To the student who can pursue his studies an extra year, and who has had the necessary training, the school offers a course in chemical engineering. It is the aim of this course to prepare men to aid in the operation of industries based on chemical principles.

### Special Students

Any of the courses in chemistry may be taken singly, provided the head of the department is satisfied that the student can pursue the work with profit.

Special courses may be arranged with the head of the department.

Students are especially urged to take the entire work on the schedule of each year. A good grounding in mathematics, physics and German is essential to success in the chemical subjects of the third and fourth years.

## Laboratories

The laboratories in the new building on Huntington Avenue are fitted with an excellent equipment in up-to-date apparatus, to give thorough instruction in all the courses offered.

A laboratory deposit of three dollars for the first year, and four dollars for all other years, must be paid before desks will be assigned. Students who have not checked up their desks by the end of the school year will be charged one dollar extra.

Owing to the increased prices of all materials used in the chemical laboratories, due to war conditions, a laboratory fee of two dollars will be charged to each student taking courses in the chemical laboratories.

The School makes an effort to secure positions for those who have successfully completed the course in chemistry, or chemical engineering.

### 40. Inorganic Chemistry. DR. SPEAR AND ASSISTANT.

A course of fifty-six experimental lectures on the fundamental laws and principles of inorganic chemistry. The course aims to familiarize the student with the properties and preparation of the following elements and their most important compounds:—oxygen, hydrogen, the halogens, sulfur, nitrogen, phosphorus, carbon, silicon, the alkali and alkaline earth groups, iron and aluminum. The course is to be taken in conjunction with (41).

Text book:

General Chemistry for Colleges, Smith.

### 41. Inorganic Chemistry Laboratory. DR. SPEAR AND ASSISTANT.

A laboratory course of 28 weeks, 90 periods in which the student is expected to verify and illustrate the facts and principles that have been discussed in the lectures. To be taken in conjunction with (40).

Text book:

Laboratory Experiments in Inorganic Chemistry, Spear.

Courses (40) and (41) are well adapted to the needs of those who wish to take the College Entrance examinations.

**42. Qualitative Analysis.** DR. SPEAR AND MR. STRAHAN.

Preparation (40) and (41), or an equivalent.

A practical course in qualitative analysis of 28 weeks, 140 periods duration, in the second year. The course relates to the identification of the common metallic elements and the ordinary acids.

Each student is expected to make complete and accurate analyses of various mixtures, alloys and chemicals used in the industries. The laboratory work is supplemented by lectures and conferences.

Text books:

General Chemistry for Colleges, Smith.

Qualitative Chemical Analysis, A. A. Noyes.

**43. Volumetric Analysis.** DR. MUELLER AND ASSISTANT.

Preparation, (40), (41), (42) or equivalent.

A course of 14 weeks, 98 periods, in the third year on volumetric determinations, involving the use and the standardization of burettes, pipettes and measuring flasks. The course includes alkalimetry, acidimetry, indicators, oxidimetry, iodimetry, chlorimetry. The laboratory work is supplemented by lectures and conferences.

Text book:

Quantitative Chemical Analysis, Talbot.

**44. Gravimetric Analysis.** DR. MUELLER AND ASSISTANT.

Preparation, (40), (41), (42), (43) or equivalent.

A course of 14 weeks, 98 periods, devoted to the principles and practice of gravimetric analysis. The laboratory work is supplemented by lectures and conferences.

Text books:

Quantitative Chemical Analysis, Talbot.

Analytical Chemistry, Treadwell and Hall, Vol. 2.

**45. Organic Chemistry.** DR. MUELLER AND ASSISTANT.

Preparation, (40), (41), (42), (43), (44).

A course consisting of 196 periods during the fourth year. The course is devoted to lectures, conferences and laboratory work, on the principles of organic chemistry, as illustrated by

the methane and benzene derivatives. The student is required to prepare in the laboratory a number of organic compounds, selected to show the characteristic reactions, and to give training in the practical separation and purification of organic substances. After this synthetic work, the students are given a practical course in organic analysis.

Text books:

Holleman, Text-book of Organic Chemistry; Gatterman, Practical Methods in Organic Chemistry, translation by Schober. Laboratory notes by the instructor.

#### 46. Technical Analysis. DR. MUELLER AND ASSISTANT.

Preparation, (45) or an equivalent.

A course of 28 periods in the fifth year, on the following:  
Analysis of gases.

Analysis and testing of mineral, animal and vegetable oils.

The origin, manufacture, properties, uses and analysis of the various fuels, and the determination of the heat value of fuels by the use of a calorimetric bomb.

#### 47 and 48. Theoretical Chemistry I and II. DR. SPEAR, DR. MUELLER.

Preparation, (3), (42), (43), (44).

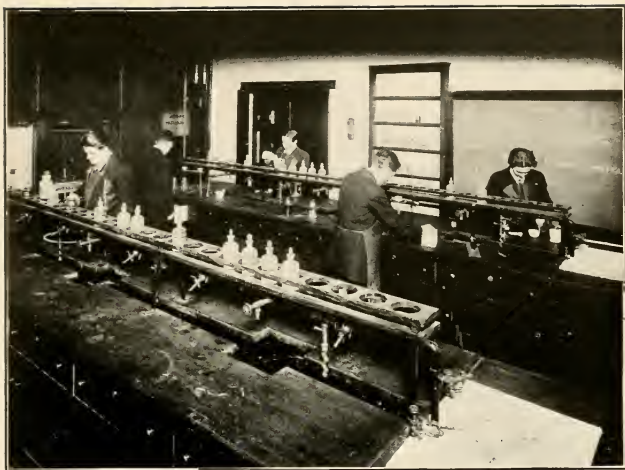
A course of 56 lectures and conferences on chemical equilibrium and electro-chemical topics. The course will include lecture experiments and discussion of problems on the law of mass action applied to the rate and equilibrium of chemical reactions, the effect of temperature and pressure, the conduction of electricity by solutions, the production of electricity by chemical change, the electromotive force of voltaic cells and single potential differences. Problems for independent solution by the student will also be given.

#### 49. Industrial Chemistry.

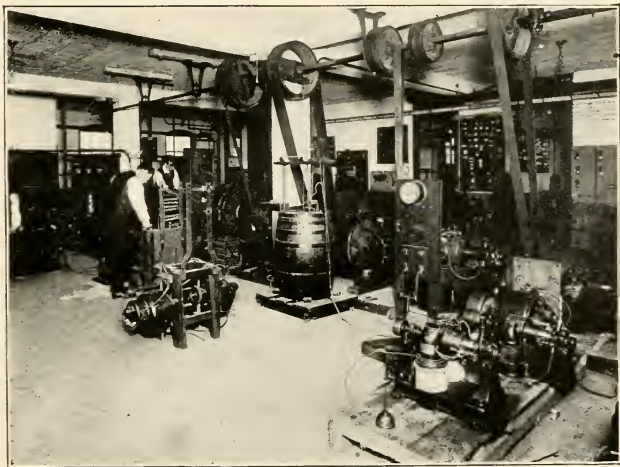
Preparation, (42), (43), (44), (45).

A course of 28 lectures and conferences on the more important chemical processes. Attention is given to many operations of a general nature common to chemical industries, such as crushing, grinding, filtration, evaporation, distillation, etc.,





CHEMISTRY LABORATORY  
(One of Three)



CORNER OF ELECTRICAL LABORATORY

and to the apparatus employed in these processes. Some of the more important industries will be taken up in detail.

Text Book:

Thorp, Outlines of Industrial Chemistry.

## DEPARTMENT OF ELECTRICAL ENGINEERING

DIRECTOR: O. R. SCHURIG, S.B.

INSTRUCTORS: LOREN N. DOWNS, JR., S.B., A. L. GARDNER, S.B., MR. F. G. HARTWELL, MR. R. E. SMITH

The course in electrical engineering is intended primarily to cover the needs of two classes of men: (1) men who are working in the electrical trades, or other mechanical trades involving the use of electricity, who desire to increase their knowledge of practical electricity and to gain a thorough understanding of the electrical engineering principles and their broader application, such as to prepare them for positions of foremen, superintendents, or operating managers in their particular field; (2) young men in business possessing a good general education, who wish to gain a knowledge of the technical matters of electricity, together with a sufficiently broad conception of the theories underlying all electrical engineering work, in order to render themselves more useful in their line of business by the combined general and technical training.

The ideal condition for laying out a single course to serve the variety of needs represented by the individual interests of the students, would obviously be exact equality of preparation for all students beginning the work of the first year. Though such equality cannot be expected of all the men entering the first year, there must be a certain general basis of preparation, in order that the work may be of the greatest benefit to the largest number of men; therefore, the work of the first year has been laid out in such a way as to be of no special difficulty to those with a high school training or the equivalent thereof; at the same time, certain men who have not had such preparation, but whose experience in practical life has sufficiently matured them, should be able to enter the first year with success, though they may be required to make up some of the preparatory work, while they may be excused from certain portions of the practical work with which their experience may have

brought them into contact. It is recommended that such men should consult with the Dean or the Director in arranging their schedule. In general, a man entering the first year should (1) have easy command of the English language, such as to enable him to express himself and write clearly, (2) be familiar with elementary mathematics and algebra, (3) know the fundamentals of mechanical drawing.

In order to accommodate students who are lacking in these preparatory matters, a preparatory year is given (see p. 10), the work of which may be required, as a whole or in part, of those with deficiencies.

Men with advanced training and experience will be admitted to the second or third year, in accordance with their preparation. Such men should not only study the program presented below, but should submit their case to the Dean or Director.

Students are invited to avail themselves of consultations with the various instructors, whenever desirable.

## **60. Practical Electricity.**

First Year—Two classroom exercises per week for 28 weeks.

This course of lectures and problem work covers the following practical subjects.

1. Simple electrical apparatus such as annunciators, burglar alarms, gas-lighting systems, arc and incandescent lamps; the wiring of such apparatus, together with a thorough discussion of electric-wiring devices; moulding, conduit, knob, tube and cleat work; methods employed in wiring old and new houses.

2. Different types of d-c. motors and generators, and devices for their control; methods of installing and connecting motors and generators, and their complete circuit; practical operation of d-c. motors and generators; their troubles, causes thereof and remedies therefor; switchboard wiring and switchboard devices for direct current, both for two- and three-wire systems; boosters and balancer sets and their use.

It is not intended to cover in this course the details of large generating stations and complex distribution systems with complicated apparatus and special devices, but rather

those of small installations as applicable to small private plants and to the average central-station consumer. In all this work special emphasis is placed on the rules embodied in the *National Electric Code* and on the best methods of modern practice.

In the course of the work, reference is made to such principles of electrical engineering as are necessary to give a clear understanding of the subject under consideration, and, in that respect, this course serves as a definite preparation leading up to the second-year course on Elements of Electrical Engineering.

#### **61. Practical Electricity Laboratory.**

First Year—One entire evening each week for 28 weeks.

This laboratory course is to be taken simultaneously with the lecture course on Practical Electricity. The experiments cover the subjects treated under Practical Electricity.

#### **62. Elements of Electrical Engineering, Direct Currents.**

Second Year—Two 1½-hour periods per week for 28 weeks.

This course of lectures, recitations and problem work is devoted to the study of the laws and properties of electric and magnetic circuits, and of the principles and operation of direct-current machinery, and of direct-current practice.

The following topics are considered:

General principles of magnetism, the magnetic circuit.

The electric circuit, Ohm's law, Kirchhoff's law, units of resistance, current and potential.

Electromagnetic induction, the dynamo.

Direct-current generators and motors, their construction, operation and applications.

Direct-current systems, generation and distribution of power, storage batteries.

Electric lighting and photometry.

A great variety of problems based on practical engineering conditions are solved, both in class and outside, by the students.

#### **63. Electrical Engineering Laboratory, Direct Currents.**

Second Year—One entire evening each week for 28 weeks.

The experiments performed in this course are intended to supplement the class-room work of the course on Elements of Electrical Engineering. The first experiments cover Ohm's

law, Kirchhoff's law and Faraday's law. In the subsequent work, the characteristics of d-c. generators and motors are determined experimentally; efficiency, losses, regulation, heating are carefully studied in the laboratory. Each student is required to furnish a complete report, including theory, method of procedure, results and conclusions, on each experiment performed by him.

**64. Elements of Electrical Engineering, Alternating Currents.**

Third Year—One  $1\frac{1}{2}$ -hour period per week for 28 weeks.

This course of lectures, recitations and problem work, covers the principles of electrostatics, the theory of variable currents in the simple series circuit containing resistance, inductance and capacity, the general theory of harmonic alternating currents, single-phase and polyphase circuits, non-sinusoidal currents and voltages. The last part of the course deals with the alternator, its regulation and efficiency, the transformer, its ratio, regulation, efficiency and application. The problems illustrating the various principles are taken, whenever possible, from the field of practical engineering.

**65. Electrical Engineering Laboratory, Alternating Currents.**

Third Year—Five evenings during last third of year.

A series of 5 laboratory exercises in the latter part of the third year are devoted to the experimental study of a-c. circuits, the alternator and the transformer, supplementing the corresponding classroom work.

**66. Technical Electrical Measurements.**

Third Year—One hour per week for 28 weeks.

In this course of lectures and recitations the theory, construction and operation of the more common types of measuring instruments are studied, together with the various methods of measurements employed in modern engineering practice. Emphasis is placed upon the useful field of application, as well as on the specific practical limitations of each instrument or testing process.

**67. Technical Electrical Measurements, Laboratory.**

Third Year—One evening per week in the first two thirds of the year, five exercises during the last third of the year.

The experiments carried on by the students in this course illustrate the use of the instruments and the testing methods studied in the course on "Technical Electrical Measurements," as well as the principles covered in the lectures on "Elements of Electrical Engineering; Alternating Currents." Each experiment is to be covered in a comprehensive report submitted by each student.

#### **68. Advanced Alternating Currents.**

Fourth Year—One hour per week for 28 weeks.

This course of lectures, recitations and problem work is devoted to the detailed study of the common types of a-c. machines, together with their application to large systems. Some of the general considerations concerning long-distance transmission are also discussed.

#### **69. Electrical Engineering Laboratory, Advanced.**

Fourth Year—One evening per week for 28 weeks.

In this course the work of the third-year course in Electrical Engineering Laboratory is continued. The more complicated types of a-c. machines are tested, and power-plant tests of the Y. M. C. A. electric plant are made. Complete reports are required on each test performed, as in the second and third-year laboratory courses.

#### **70. Electricity Supply Stations.**

Fourth Year—One exercise per week for 28 weeks.

This course deals with the layout, construction and operation of electric power generating stations, substations and distribution systems. Emphasis is placed upon the characteristics, both technically and economically, of each type of station, steam-power-operated, water-wheel-driven and internal-combustion-motor-operated. The various rate systems and their specific fields of merit will also be discussed.

#### **71. Power Transmission.**

Fourth Year—One 1½-hour exercise per week for 14 weeks.

In this course are considered the economic problem of power transmission, the principles governing the design and the construction of transmission lines, and some of the more important legal requirements.

## **72. Electric Railways.**

Fourth Year—One 1½-hour period per week for 14 weeks.

This course includes the following subjects: Train resistance, characteristics of railway motors, design of motor equipment, electric locomotives, design of power generating and distribution system for electric railways; also such details as car construction, rails, bonding, trolley and third-rail construction. The subjects of storage-battery traction, and steam-railroad electrification are also briefly discussed.

## **73. Thesis.**

During the final year, each student in order to qualify for a diploma, must prepare and present a report upon some piece of original work, investigation of some piece of machinery, consideration of some practical problem, or similar subject, the students working either alone or in pairs, and at such time as they please, within limits, the subjects being selected in consultation with one of the instructors, who will have immediate supervision of the work.

The object of this work is to develop the student's powers of original investigation and to teach the principles upon which the study of special problems of various kinds should be approached. It is hardly expected that the immediate results of the investigation will be of great value, in view of the time allowable, considered as contributions to engineering knowledge, but it is expected and believed that the value to the student himself will be very great.

## **80. Heat Engineering: Thermodynamics and Boilers.**

A course of 28 hours in the study of the principles of thermodynamics; a discussion of the properties of gases, saturated and superheated vapors, especially of air and steam; of the flow of fluids through orifices, nozzles, pipes and meters, a discussion of the action of the steam injector; a study of the various cycles of the hot air, internal combustion and steam engines of the turbine, air compressor and refrigerator systems. These engineering applications are treated from the physical, analytical and graphical points of view, so as to give the student a good foundation in the principles of thermodynamics, in the solution of actual heat engineering problems. The course also includes



a study of the simple, compound and multiple expansion steam engine, of the different types of gas engines, of the gas producer, of compressed air and refrigerator machines, and the methods of testing such machines.

The latter part of the course includes a study of the various types of steam boilers and the different kinds of power plant apparatus, including fans, blowers, economizers, condensers, feed pumps, etc. A short discussion of the construction and stability of chimneys is also given.

## DEPARTMENT OF STRUCTURAL ENGINEERING

DIRECTOR: C. S. ELL, M.S.

INSTRUCTORS: H. H. AMBLER, S.B., C. A. FARWELL, S.B.

The four years' course in structural engineering covers thorough instruction in mathematics, mechanics and the theory and practice of drafting, detailing, estimating and designing. Thorough instruction is given by means of lectures and class-room work in the important theoretical and practical principles of design, supplemented by the execution of detail drawings in the drafting room.

### 100. Practical Physics.

This course consists of two lectures per week, on Monday and Friday evenings, throughout the year. Instruction is given in the practical application of physical laws. Each lecture, as far as possible, is accompanied by practical tests in the lecture room on large size apparatus, built especially for this course, so that the student may actually see a demonstration of the truth of the various laws, thus enabling him to grasp readily the underlying principles. The course is devoted to a study of the mechanics of solids, liquids and gases, heat and its effects, together with lectures on light and sound. Practical problems covering each phase of the work are given throughout the year which are designed to fix in the student's mind the fundamental principles taken up in the lectures. The supplies for this course are a set of notes on "Practical Physics" prepared by C. S. Ell, a pair of small 4 or 5 inch triangles and a 4-inch cardboard protractor.



### **110. Structural Drawing.**

The course in structural drawing occupies one evening a week throughout the entire second year. The course consists in the working out of various graphical problems of mechanics on the drawing board, drawing standard sections of structural steel shapes, structural details and the preparation of drawings, representing simple structures. The purpose of this course is to familiarize the student with detailed drawings and teach him where and how to dimension structural parts on working drawings.

### **111. Structural Design.**

The course in structural design consists of work in the drawing room, one complete evening each week throughout the third year. It is a continuation of the course in structural drawing given in the second year, and includes the execution of elementary structural design, taking up in a practical way the principles given in the course in Theory of Structures. Each student is given data for various problems, the designs for which he works out in the drawing-room, making all necessary computations and executing all drawings necessary for the preparation of a complete design of a number of engineering structures.

### **112. Bridge Design.**

The course in bridge design occupies one complete evening a week throughout the fourth year. Most of the work is done in the drawing room, but instruction is given from time to time by means of lectures. The work includes the execution of complete designs for several types of railroad bridges and the execution of complete working drawings.

### **113. Structural Mechanics.**

This course consists of one period on Monday and Friday evenings, throughout the second year. The course covers the fundamental principles of statics, the computation of shear and moment diagrams, a study of the centre of gravity and the moment of inertia of plane figures and the application of the various principles of mechanics to the solution of simple structural problems. The work consists of lectures, recitations and the solution of problems, many of which are done in the drawing room.

#### **114. Theory of Structures.**

This course occupies one period on Monday and Friday evenings throughout the third year and consists of lectures, recitations and solution of problems. In this course instruction is given in the fundamental theory of structures including the theory of beams, computation of reactions, moments, shears for static and moving loads. The work in the class-room is supplemented by the solution of many practical problems in the drawing room.

#### **115. Strength of Materials.**

This course occupies one period on Monday and Friday evenings throughout the third year, consisting of lectures, recitations and the solution of problems. Instruction is given in the properties of various building materials, such as stress, strain and the various elastic properties of the different materials. Study is also made of the strength, composition and adaptability of steel, timber, stone, concrete and various other materials for use in structures.

The common theory of beams is also studied with a thorough discussion of the distribution of stress, shearing forces, bending moments, slopes and deflections.

#### **116. Advanced Structures.**

This course occupies one period on Monday and Friday evenings, throughout the fourth year. It is a continuation of the theory of structures given in the third year and takes up the fundamental principles involved in the design of various engineering structures, such as buildings, bridges, retaining walls, arches and other structures, as the time permits. Instruction is given by means of lectures and recitations and the various theoretical principles are applied in the execution of practical designs in the drawing room.

#### **117. Concrete Construction.**

This course occupies one period on Monday and Friday evenings throughout the fourth year. The various principles of design of structures of reinforced concrete are taken up by means of lectures. Instruction is given in the theory and practice of reinforced concrete construction and the student

solves many problems illustrating the computations for design of beams, girders, floor slabs, columns, footings, retaining walls, etc. Some of these problems are worked out and drawings are made in the drawing room.

## **DEPARTMENT OF RAILROAD ENGINEERING AND MUNICIPAL ENGINEERING**

**INSTRUCTORS:** JOHN W. HOWARD, S.B., CHARLES H. RESTALL, S.B.

The school offers a complete course in Municipal Engineering to meet an urgent demand for instruction in this Department. The course, extending over a period of four years, has been prepared with great care and it is believed will meet the requirements of those who wish to equip themselves for Town or City Engineers.

Students wishing to take separate courses may do so on approval of the Dean.

### **130. Topographical Drawing.**

This course of 28 weeks in the second year is primarily designed to give training in the interpretation and drawing of topographical maps. It consists of one and one-half hours per week in the drawing room, devoted to the study of the different conventional signs employed, and each student is required to make a number of plates and to become reasonably proficient in the preparation of such maps. Particular attention is given to the study of contour maps, and the solution of problems relating thereto.

### **131. Surveying and Plotting. MR. HOWARD.**

Preparation: Trigonometry or Mathematics II (2).

The course in surveying consists of 3 hours instruction each week during the second year, in the theory of plane surveying, with field exercises on Saturday afternoons in the Fall and Spring.

During the first term the field work consists of practice in the use of the transit and tape in making surveys for determining areas and for making plans. The class work includes methods of computing areas, subdividing land, and all of the common problems of plane surveying,

The second term is devoted chiefly to drawing. Students are required to plot a survey of a city lot on a scale of 40 feet to an inch, to draw a plate of conventional signs used in topography, and to plot a topographical map on a scale of 100 or 200 feet to an inch.

In the spring the field work consists of practice in using the level for establishing bench marks, running profiles, cross sectioning, etc. The class work includes problems in the use of contour maps, plotting profiles, estimates of earthwork, etc. If time permits, instruction is given in stadia and plane table surveying.

### **135. Materials of Construction.**

A course of one and one-half hours per week during the third year, taking up a consideration of the properties of the various materials used in engineering construction, such as wood, iron, steel, brick, stone, cement and concrete.

### **140. Foundations.**

A course of one hour per week during the last eight weeks of the fourth year.

The subjects treated in this course are as follows: Building stones and concrete, bearing power of different kinds of soil, examination of the site, designing the footings, whether of masonry, or of steel and concrete, independent piers, pile foundations, compressed air processes, freezing processes, retaining walls, together with some details of buildings for industrial purposes, constructed of steel or of reinforced concrete.

### **145. Highway Engineering.**

A course of one hour per week throughout the second year, in which are treated the following subjects:

The construction of roads and city streets, the problems of drainage and maintenance, qualities of trap rocks, good gravel, binding materials, paving blocks and bricks, concrete foundations, and the uses of asphaltic oils and other bituminous materials.

### **150. Hydraulic Engineering.**

A course of one and one-half hours per week during the fourth year. The course consists of two parts. The first is

devoted to the study of theoretical hydraulics dealing with hydrostatic and hydrodynamic pressure, the flow of water through channels, pipes, orifices and nozzles and over weirs. The second part deals with such practical problems as the study of stream flow and storage and the development of water power.

#### **151. Hydraulic Motors.**

A course of one and one-half hours per week, mainly recitations covering the principles of hydrostatic and hydrodynamic pressure, the flow of water through open channels, pipes, orifices and nozzles and over weirs. Half the time is given to a study of impulse wheels and reaction turbines, with reference to their proper construction, regulation and testing, and to the various sources of loss of energy in their operation.

#### **155. Sanitary Engineering.**

A course of 65 hours during the fourth year, consisting of the study of water supply and sewage disposal and their relation to public health, the sources of water supply, tests for purity, bacteria, etc., the design of a sewage disposal system, septic tanks, filter beds, and the collection and disposal of garbage wastes.

#### **160. Municipal Engineering Problems.**

A course of 28 weeks in the fourth year dealing with various engineering problems encountered by town and city engineers such as construction of sewers, retaining walls, bridges, grade crossing problems, making of contracts and writing specifications for various construction work, methods of inspection and handling of public service properties, such as poles, lines, conduits, tracks, etc.

#### **165. Railroad Engineering. MR. RESTALL.**

A course of 3 evenings per week during the fourth year. It includes the study of the following:

Railroad location, as influenced by topographical features, purpose, grades, pusher grades, length of line curvature, rise and fall. Field work and making of location plans.

Computation and methods of laying out of simple, compound, reverse and easement curves. Circular and parabolic

curves in connection with gradients. Practical curve problems.

Earthwork, slope stakes, cross sections, burrow pits, methods of computations, tables and diagrams.

Frogs, switches, turnouts, cross-overs, crossing frogs, turnout tables, track, track laying, rail, ballast and drainage.

Yard design, passenger and freight yards, gravity yards, hump yards, yard accessories, stations, terminals, elimination of grade crossings, methods of construction and making estimates.

*Draughting.* The course will be supplemented to some extent by draughting and by railroad designing.

*Fieldwork.* Where necessary to illustrate the principles involved in the course, exercises will be given in the field on Saturday afternoons in the spring.

*Preparation.* Algebra, geometry, trigonometry, surveying.

If not qualified by having passed the above subjects, a student may be admitted as a special student on approval of the instructor of the course with the consent of the dean.

#### 170. Applied Mechanics.

This course of 70 hours comprises a study of general methods and applications of statics, including the determination of stresses in frames; of centre of gravity, moment of inertia and radius of gyration; of kinematics and dynamics including uniform and varying rectilinear and curvilinear motion, centrifugal force, momentum, impact, work, power and kinetic energy.

### DEPARTMENT OF LANGUAGES

#### 180. English P.

A course of two hours per week throughout the preparatory year, taking up the principles of composition, special attention being given to spelling, punctuation and grammar. The object of the work is to enable the student to express himself clearly, forcibly and properly.

#### 185 and 186. German I and II.

These courses of one hour per week throughout the third and fourth years respectively, are planned to give the student a knowledge of German grammar as well as a working vocabulary of scientific terms.

# Equipment

The School is now housed in the new building of the Association, and has very exceptionally equipped quarters for carrying on the work of the Engineering Courses.

## MECHANICAL DEPARTMENT

### Mechanical Laboratories.

Our own steam engineering plant is completely equipped with meters, scales, indicators and all the necessary accessory equipment for making complete boiler tests, and determining the efficiencies of the various appliances used in generating power, heat and light for our new building. This places at the disposal of our classes a perfectly equipped, up-to-date, engineering department, and gives them the means of carrying on boiler tests, determining the efficiencies of various fuels and oils, taking indicator diagrams, determining the efficiency of modern reciprocating engines and turbines when direct connected to generators, as well as renders them familiar with all the various auxiliary appliances of such a plant, as condensers, pumps, air compressors, etc. The students also have the use of the equipment of our Automobile School, thus giving opportunity to study the most advanced ideas in gasoline engine practice.

## MECHANIC ARTS LABORATORIES

There are at present two laboratories, one for metal work and the other for wood working and pattern work, which are available for the use of our students.

The metal working laboratory is well equipped, and affords the student an opportunity for work with various machines, as: lathes, shapers, drill presses and milling machines. There are also a gas forge and brazing furnace, together with all the required equipment for bench work instruction.

The wood working laboratory has a power band saw, lathes, circular saw, buzz planer and all the necessary equipment for wood working and pattern work.

In addition to the foregoing, a small but completely equipped shop for the construction and repair of apparatus and for the use of students in connection with their thesis work

has been installed. This shop is equipped with a metal and wood working lathe, grinder and all the necessary wood and metal working tools. There is also a very complete set of cabinet worker's tools for use in wood working.

## **CIVIL ENGINEERING DEPARTMENT**

### **Field Instruments.**

For work in the field the Department possesses various surveying instruments, representing the principal makes and types of instruments in general use. The equipment includes transits, levels, compasses, a complete plane table outfit, Locke hand level, flag poles, leveling rods, stadia rod, engineers' and surveyors' chains, steel and cloth tapes and other accessories. For Higher Surveying, an Aneroid Barometer is used for barometric leveling, and the transits are equipped with neutral glasses and reflectors for astronomical observations, as well as a sextant, reading to ten seconds, and equipped with neutral glasses and telescopes. This year a Buff and Buff No. 1 Engineer's Transit has been added to the equipment.

The scope of the equipment and the fieldwork itself are designed to train the student's judgment as to the relative merits of the various types of field instruments.

### **Design and Drafting Rooms.**

The School possesses large, light and well equipped drawing rooms for the carrying on of the designing and drafting, which form so important a part of civil engineering work. These rooms are supplied with lockers containing the drawing supplies, and files containing blue prints and photographs of structures that represent the best practice. Many of the prints and photographs are of structures erected in and about Boston.

## **ELECTRICAL ENGINEERING DEPARTMENT**

The Electrical Laboratory is well equipped with apparatus for teaching the principles of measurements, and the equipment is being steadily increased and developed for the doing of work of a higher degree of precision. Among the special pieces of apparatus may be mentioned the following: Cary Foster Bridge, a modified form of Hoopes Conductivity Bridge, a Laboratory



Wheatstone Bridge, a Leeds Northrup Potentiometer with Volt box, standard cells and low resistance standards, an accurate Chemical Balance and other appliances for the close determination of currents, resistances and potential differences.

There was added last year a set of variable inductances, and a set of condensers to the amount of eighty microfarads capacity variable in steps of one-tenth microfarad each.

Among the instruments for testing purposes, for alternating current work, may be mentioned the following: Three matched voltmeters and three General Electric Type P-3 Iron clad wattmeters arranged for Y connection, one G. E. Polyphase Wattmeter with double current and potential ranges, numerous other voltmeters of various ranges, potential transformers, numerous ammeters some with current transformers, three integrating meters, one General Electric and one Westinghouse polyphase, switchboard type, integrating wattmeters and a High Torque General Electric test meter. There is also a considerable and increasing assortment of auxiliary testing apparatus, such as synchronism indicators, power factor indicators, frequency indicators, etc.

For direct current testing, there is a large and increasing collection of Weston instruments, both voltmeters and ammeters, of suitable ranges and grades of precision, while the measurement of unusual currents and voltages is ensured by three Weston millivoltmeters with an assortment of standard shunts and multiplying resistances of various orders of magnitude.

For calibrating purposes, a 120 ampere-hour storage battery has been added to the equipment for current tests, while for voltage work, there is a 260 volt potential battery.

There is also the usual assortment of testing devices, such as speed indicators, tachometers, brakes, loading resistances and the numerous minor pieces of apparatus needed in practical testing and operating of electrical machinery.

Among the machines of this Department, are a pair of specially made, matched machines arranged to run as single phase, two or three phase generators, or motors, as well as synchronous transformers, double current generators, or on the Direct Current side as shunt, series or compound, generators, either two or three wire, or as motors.

There are also a 15 horse power 230-volt Westinghouse motor, a new General Electric 10 horse power Interpole 230-volt motor, a 500-volt generator, two 500-volt series and several 500-volt shunt motors, and a series parallel controller.

A 45 K. V. A., 60-cycle, single phase, 500-volt generator giving a practically pure sine wave, three General Electric Type H transformers, each of 3 K. V. A. capacity, a 7 1-2 K. V. A. special General Electric 60-cycle 230-volt alternator, with revolving field tapped for either 1, 2, 3 (star or mesh connection) 6 or 12 phase connection, which may be operated also as a synchronous motor.

During the past year there have been added a 5 H. P. G. E. single phase induction motor, which may also be operated as a three phase motor and a 10 H. P. Fort Wayne shunt motor driving a special Holtzer-Cabot 3 phase 5 K. V. A. Alternating Current Generator. This latter machine has two special rotors, permitting its use as a squirrel cage or phase wound induction motor. A three phase regulating resistance for use with the phase wound rotor, has also just been installed.

There is also available for advanced instruction, in co-operation with the Mechanical Department, the four three-wire generators (two driven by reciprocating engines and two by Westinghouse-Parsons turbines) in the main generating plant of the Association.

## DEPARTMENT OF PHYSICS

There is a large laboratory devoted entirely to Physics together with a lecture room.

The Physics Department has been very completely equipped with all necessary apparatus for the experimental work that is required of the students, as well as that required for lecture demonstration. Among other things have been added: verniers, levels, spherometers, calorimeters, thermometers, pyrometers, a spectroscope, a microscope, a spectrometer, balances, standard gram weight, lecture table galvanometer, optical disk with all accessories, lenses, photometer, a full set of Weather Bureau apparatus, including a barograph, thermograph, hygrometer, barometer, maximum and minimum thermometers, etc. These, in addition to the equipment already owned, give a wide range to the experimental work that can be done.

## DEPARTMENT OF CHEMISTRY

This Department is completely equipped in all respects for carrying on all lines of Chemical work, from that of a High School to that of most advanced College grade. The three laboratories, with accommodations for over one hundred and fifty students, are very exceptionally furnished with all the necessary appliances for chemical work. Some of these are: hoods, drying closets, still, steam and hot water baths, electrolytic circuits, vacuum and pressure apparatus, balances, combustion furnaces, complete sets of apparatus for the sampling and analysis of flue gases and fuels. There are also testing machines for oils, viscosimeters and different sorts of flash point apparatus. A chemical museum is connected with this Department where are kept specimens for purposes of illustration.

## LIBRARIES

There is in connection with the School a professional library containing books pertaining to both the school work of the boys and to their practical work. In addition to this there also are current periodicals on engineering and scientific subjects for their exclusive use. All members of the School are entitled to take books from the Boston Public Library, and this offers a very unusual opportunity to our non-resident students.

## DEPARTMENT OF PHYSICAL TRAINING

Our new gymnasium with all the latest modern equipment gives ample accommodation for all students.

There is a running track on the grounds adjoining, together with tennis and hand ball courts; also a large natatorium where swimming is taught by competent instructors.

In connection with this Department, there are also six excellent bowling alleys, which may be used by the students upon the payment of a nominal fee.

## RESTAURANT AND BARBERSHOP

Attention is called to the fact that there is a spa on the first floor and restaurant in the basement of the Association building. There is also a barber shop in the basement.

For all further information, write

The Evening Polytechnic School,  
316 Huntington Ave., Boston, Mass.

# **Additional Information**

The School reserves the right to retain for its annual exhibition, and for any other purpose which it may deem necessary, drawings made by students.

## **Scholarships.**

As an aid to worthy men who desire an education and are unable to pay in full even our slight charges, a limited number of scholarships have been provided, which will be judiciously distributed by the Educational Committee, to whom application should be made.

## **Entrance Requirements.**

Any man of good character, regardless of age, occupation or creed, with adequate general education may be enrolled in the School.

A student may elect any subject, or combination of subjects, which best serves his particular needs. However, to prevent loss of time and expense to the student, he will not be allowed to elect courses which, on account of inadequate preliminary training and experience, he could not pursue with profit. The Dean should be consulted before registration.

## **Certificates.**

Upon the satisfactory completion of any of the regular, or special courses, the student is entitled to receive a certificate. No certificates will be given, however, unless the student has successfully performed the prescribed work and passed the necessary examinations.

## **Suburban Members.**

All tickets held by members of the Cambridge, Chelsea, Everett, Lynn, Malden, Melrose, Newton, Quincy, Salem and Somerville Associations, will be honored for membership in the Boston Association.

# Schedule of Rates

Preparatory year, \$20, payable as follows: \$10 upon entering, \$5.00 November 15 and \$5.00 January 15.

Courses I and II (Chemistry and Electrical Engineering)

First year, \$35, including membership, payable as follows:—\$15 upon entering, \$10 November 15 and \$10 January 15.

Second, third and fourth years, \$50 each, including membership, payable as follows:—\$20 upon entering, \$15 November 15 and \$15 January 15.

Courses III, IV and V (Structural, Railroad and Municipal Engineering)

First year, \$30, including membership, payable as follows:—\$10 upon entering, \$10 November 15 and \$10 January 15.

Second, third and fourth years, \$50 each, including membership, payable as follows:—\$20 upon entering, \$15 November 15 and \$15 January 15.

Special Note—The following rates are in addition to membership (\$2). In case more than one course is taken, a discount of \$3 for each additional course will be made.

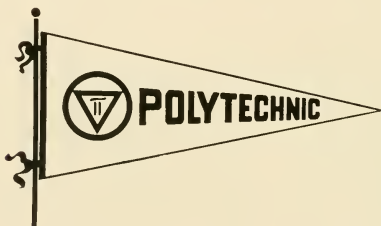
Course	Tuition	Course	Tuition
68 Adv. Alternating Currents	\$15.00	*40 and 41 Inorganic Chemistry	\$24.00
11 Adv. Mech. Drawing and Orthographic Projections	12.00	38 Life Class	20.00
116 Advanced Structures	24.00	12 Machine Drawing	11.00
170 Applied Mechanics	18.00	135 Materials of Construction	24.00
20 Architectural Drawing I	10.00	1 Mathematics P	13.00
21 Architectural Drawing II	10.00	2 Mathematics I	15.00
22 Architectural Drawing III	13.00	3 Mathematics II	15.00
112 Bridge Design	24.00	10 Mechanical Drawing P	10.00
65 Elec. Eng., Lab. A. C.	12.00	160 Municipal Eng. Problems	24.00
63 Elec. Eng., Lab. D. C.	24.00	*45 Organic Chemistry	50.00
69 Elec. Eng., Lab., Advanced	15.00	100 Practical Physics	15.00
70 Electricity Supply Stations	13.00	60 Practical Electricity	24.00
72 Electric Railways	13.00	71 Power Transmission	13.00
180 English		*42 Qualitative Analysis	32.00
64 Elements of Elec. Eng. A. C.	12.00	165 Railroad Engineering	50.00
62 Elements of Elec. Eng. D. C.	24.00	117 Concrete Construction	24.00
180 English P	10.00	155 Sanitary Engineering	24.00
140 Foundations	13.00	115 Strength of Materials	24.00
30 Freehand Drawing I	10.00	111 Structural Design	24.00
31 Freehand Drawing II	10.00	110 Structural Drawing	24.00
185 German I		113 Structural Mechanics	24.00
186 German II		131 Surveying and Plotting	24.00
*44 Gravimetric Analysis	25.00	*46 Technical Analysis	25.00
80 Heat Engineering	18.00	66 and 67 Tech. Elect. Meas'ments	24.00
145 Highway Engineering	18.00	47 Theoretical Chemistry I	18.00
150 Hydraulic Engineering	18.00	48 Theoretical Chemistry II	18.00
151 Hydraulic Motors	18.00	114 Theory of Structures	24.00
35 Industrial Design	10.00	130 Topographical Drawing	18.00
*49 Industrial Chemistry	18.00	*43 Volumetric Analysis	16.00

\*Owing to the increased price of all material used in the chemical laboratories, due to war conditions, a laboratory fee of two dollars will be charged to each student taking courses in the chemical laboratories.

The tuition for all courses payable in advance unless stated to the contrary, in which case times of payment are indicated, Numbers preceding courses refer to description of courses. pages 17 to 40.

Students who discontinue a course, but who have attended four or more recitations in the subject, will be required to pay a term's tuition.

No student is permitted to transfer from one course to another without consulting the Dean beforehand and receiving a transfer order which must be presented at the main office for the proper ticket.



## POLYTECHNIC ASSOCIATION

This is an organization formed and managed by the students. Its object is to provide social gatherings for the Polytechnic students, and to establish a bond of friendship among the men.

All men entering the Polytechnic School may join this association by filling out the proper blank at the educational office. Membership is free.

A school pin, pennant and engraved stationery with Polytechnic design may be ordered by the members.

## GENERAL DEPARTMENTS

### DEPARTMENT OF RECREATION AND HEALTH

ALBERT E. GARLAND, M.D., B.P.E., Director

This is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped Indoor and Outdoor Gymnasiums, Indoor and Outdoor Running Track, Recreative, Hygienic and Educational Gymnastics, Sanitary Locker System. Numerous classes the year round. Shower, steam and electric baths; natatorium. Best instruction. Medical direction. Hand ball courts, Tennis Courts, Bowling Alleys.

### DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work, the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups and The Twenty-Four-Hour-A-Day-Club.

### DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room

The Land and Water Club

The Association Congress

Popular Social Evenings

Lectures and Entertainments

### DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

*The Employment Department* is, in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

### BOYS' DIVISION

JAMES G. BARNES, S.B., Boys' Work Secretary

*The Boys' Division* is made up of boys from Greater Boston whose needs are ministered to by a splendid force of young men who have made a careful study of "boyology." The Division contains all kinds of boys, from twelve to eighteen years of age, whose needs are studied and whose problems we try to solve. Activities are conducted along social, physical, educational and spiritual lines. The annual membership fee is \$2.00; gymnasium and natatorium privileges are open to the boys at special rates.





# EVENING LAW SCHOOL

EIGTHTEENTH YEAR

1915-1916



BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

# DEPARTMENT OF EDUCATION

## Boston Young Men's Christian Association

### SCHOOL OF LAW

Evening Sessions Only

Established in 1898; incorporated in 1904. Provides a four years' course in preparation for the Bar and grants the Degree of Bachelor of Laws.

### SCHOOL OF COMMERCE AND FINANCE

Evening Sessions

Established 1907; incorporated 1911. Offers the following four-year courses leading to the degree of B. C. S. (Bachelor of Commercial Science): Business Administration, Finance, and Professional Accountancy. Any one passing the examination for advanced standing is enabled to complete any one of the four regular courses and secure the degree in three years. Special courses in addition to regular courses.

### SCHOOL OF CO-OPERATIVE ENGINEERING

Day Sessions

Four-year courses of college grade in Chemical, Mechanical, Civil and Electrical Engineering, etc., in co-operation with business firms. Students earn while learning. Open to High School graduates.

### HUNTINGTON SCHOOL

Day Sessions

A high-grade school, consisting of a Preparatory Department of seven classes fitting for Colleges, Technical and Professional Schools, a Technical Department, fitting for positions along engineering lines and a Business Department preparing students for business pursuits.

### PREPARATORY SCHOOL

Evening Sessions

A school of high school grade preparing students for Colleges, Scientific Schools, West Point, Annapolis, Lowell School for Industrial Foremen, and our professional schools.

### SCHOOL OF BUSINESS

Evening Sessions

Offers all of the courses of the regular Business School program, and additional cultural courses, preparing for business and admission to our School of Commerce and Finance.

### POLYTECHNIC SCHOOL

(COLLEGE GRADE)

Evening Sessions

A school offering three and four-year courses in Chemistry, Chemical, Electrical, Structural, Railroad, and Municipal Engineering.

### SCHOOL OF AUTOMOBILE ENGINEERING

Day and Evening Sessions

Deals with the construction, care, repair and operation of all types of gasoline vehicles; a large staff of teachers; ample equipment and garage.

For further information concerning any of the above schools, or departments, address the Director of Education,

FRANK PALMER SPEARE

316 Huntington Avenue, Boston, Mass.

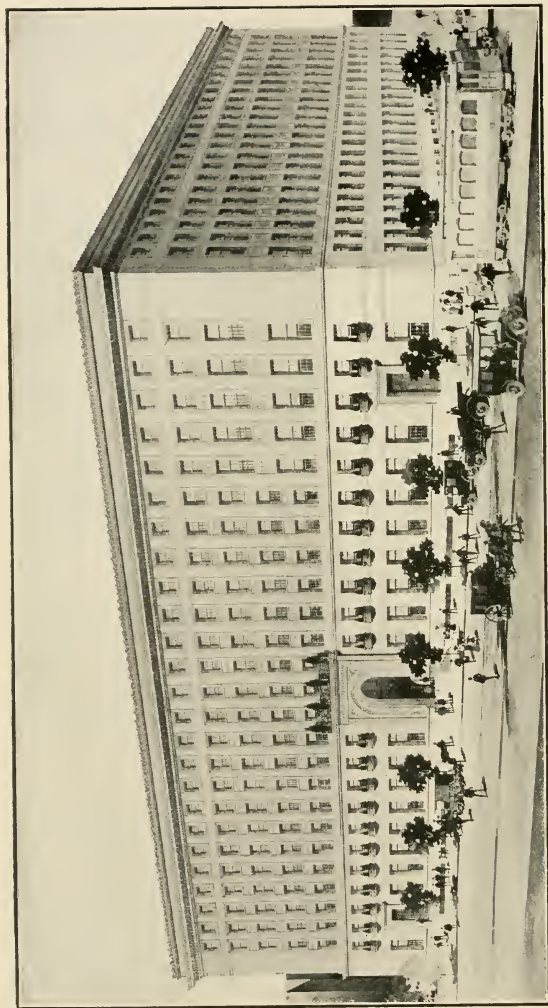
Telephone, Back Bay 4400.

**EVENING  
LAW SCHOOL  
EIGHTEENTH YEAR**

**1915-1916**



**BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION  
316 Huntington Avenue  
Boston, Mass.  
1915-1916**



### OUR NEW HOME

The above cut represents the new million dollar Association Building, 312 Huntington Ave., Boston, Mass. It contains among other features, school accommodations for 3000 students, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreation rooms and auditoriums.

# Calendar

1915

Sept. 7 - Sept. 11	Condition Examinations
Sept. 7-18	Registration
Sept. 13	Senior Class Lectures begin
Sept. 20	Lectures begin
Sept. 27	Freshman Reception
Oct. 12	Columbus Day
Nov. 25	Thanksgiving Day
Dec. 18	Joint Social, Law School and School of Commerce and Finance
Dec. 19-26	Christmas Recess

1916

Feb. 22	Washington's Birthday
April 19	Patriot's Day
May 30	Memorial Day
June 11	Baccalaureate Address
June 14	Commencement

Additional social features will be announced from time to time.

## CONDITION EXAMINATIONS, 1915

Tuesday, Sept. 7	Criminal Law, Property I, Corporations
Wednesday, Sept. 8	Torts, Equity I, Property II (Deeds)
Thursday, Sept. 9	Common Law Pleading, Agency, Partnership
Friday, Sept. 10	Contracts, Bills and Notes, Equity II
Saturday, Sept. 11	Sales, Wills

Examinations must be taken at the time scheduled, as no special examinations will be given.

# Organization

## General Administrative Officers of the Boston Young Men's Christian Association

ARTHUR S. JOHNSON, *President*

LEWIS A. CROSSETT, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*

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### Committee on Education

WILLIAM E. MURDOCK, *Chairman*

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE H. MARTIN

### Executive Officers of the Department of Education

FRANK P. SPEARE, M. H.

*Director*

GALEN D. LIGHT, A.B.

*Assistant Director and Bursar*

WALTER G. HILL, A.B.

*Assistant Bursar*

EDWARD H. BROOKE, A.B.

*Registrar*

CHARLES B. GRAY, A.B.

*Secretary*

FRED L. DAWSON

*Field Secretary*

# Law School Corporation

SAMUEL J. ELDER, *President*

PROF. EZRA R. THAYER, *Vice-President*

GEORGE W. MEHAFFEY, *Secretary*

D. CHAUNCEY BREWER

ROBERT G. DODGE

LEWIS A. CROSSETT

ARTHUR S. JOHNSON

# Faculty and Special Lecturers

FRANK PALMER SPEARE, M.H., *Dean*

ASA SAMUEL ALLEN, LL.B., *Assistant Dean*

GALEN D. LIGHT, A.B., *Secretary*

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W. LLOYD ALLEN, A.B., J.B.  
Agency

CHARLES NEAL BARNEY, A.M., LL.B.  
Equity I and II

HERBERT LUTHER BARRETT, A.B., LL.B.  
Criminal Law

WILLIAM EDWIN DORMAN, A.B., LL.B.  
Constitutional Law

ELIAS FIELD, A.B., LL.B.  
Property I

GUY HAROLD HOLLIDAY, A.B., LL.B.  
Common Law Pleading

HENRY TILTON LUMMUS, LL.B.  
Moot Court

HUGH DEAN McLELLAN, A.B., LL.B.  
Contracts

KEITH McLEOD, A.B., LL.B.  
Property II and Massachusetts Practice

GUY NEWHALL, A.B., LL.B.  
Property III

CLARENCE LUCIAN NEWTON, Ph.B., J.M.  
Corporations and Wills

RAYMOND TASKER PARKE, A.M., LL.B.  
Bills and Notes, and Sales



OSCAR STORER, A.B., LL.B.  
Torts and Evidence

SYDNEY RUSSELL WRIGHTINGTON, A.B., LL.B.  
Partnership

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ARTHUR A. BALLANTINE, A.B., LL.B.  
Of Goodwin, Procter & Ballantine

SAMUEL C. BENNETT, A.B., LL.B.  
*Attorney at Law*

HOWARD W. BROWN, LL.B.  
Of Davis, Peabody & Brown

ALBERT P. CARTER, A.B., LL.B.  
*Attorney at Law*

ROBERT CUSHMAN, A.B., LL.B.  
Of Roberts, Roberts & Cushman

ROBERT G. DODGE, A.M., LL.B.  
Of Storey, Thorndike, Palmer & Dodge

FRED T. FIELD, A.B., LL.B.  
*Attorney at Law*

ARTHUR D. HILL, A.B., LL.B.  
Of Hill, Barlow & Homans

FAY B. KENDALL, LL.B.  
Of Sprout & Kendall

EDWARD F. McCLENNEN, LL.B.  
Of Brandeis, Dunbar & Nutter

HUGH W. OGDEN, A.M., LL.B.  
Of Whipple, Sears & Ogden

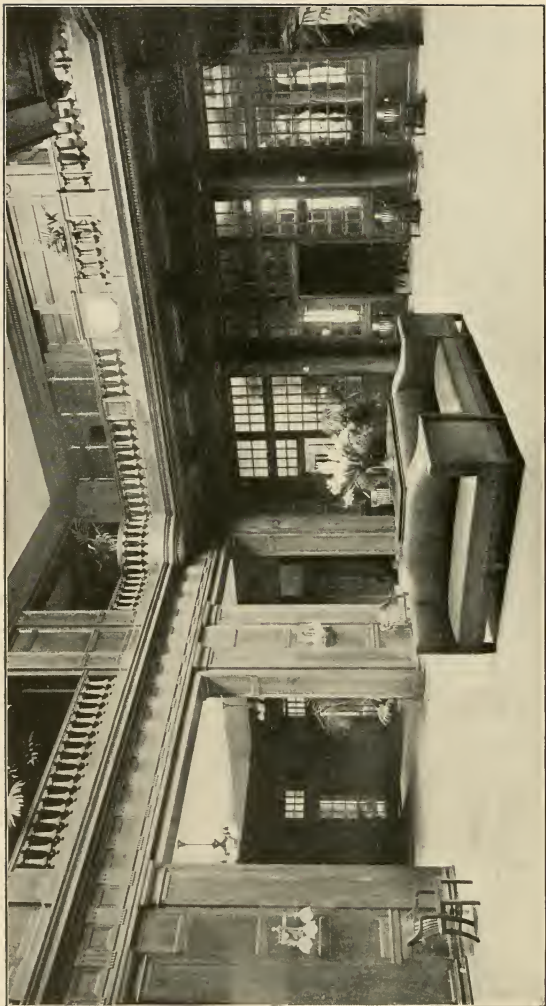
CHANDLER M. WOOD, A.M., J.M.  
*Attorney at Law*

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JAMES A. BELL, Jr., Ph.B., A.B., *Chairman of Committee on Admission*  
JOHN S. PATTON, Jr., A.B., LL.B., *Counselor*  
NATHAN BIDWELL, *Counselor*  
LEAH M. CROWELL, *Recorder*

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C. MARVIN CADY, M.A., *Librarian*



LOBBY

# The Study of Law

Statistics show a larger number of men attending the American Law Schools than any other type of professional school.

This class of unusually intelligent men would not decide upon the law unless there were inducements to join in what is often the keenest competition. The reasons are plain, however, to one in touch with industrial, commercial and political life and may be summed up as follows. The law, treating of every phase of human relationship, fits the student in a most unusual manner to deal with men and affairs, trains him to think, to think straight, to think a proposition clear through to the end and then to act in accordance with judgment based on a clean-cut analysis of the facts, pro and con. This habit of analytical thinking and judicial action is indispensable to the practitioner of law and of equal importance to the business man and those in political life, and accounts in large measure for the marked success attending legally trained men in these lines of activity and the large number constantly going from the Law Schools into diversified occupations.

Another valuable feature of the study of law, quite apart from most subjects, is the fact that one begins to grow mentally as soon as he begins to study and his progress may be noted from the outset, while the frequent application of the things learned is most strikingly evident to the business man. A law course, therefore, like money on interest, begins to yield a return from the beginning which rolls up month by month. The student of law if obliged to withdraw after a limited period finds himself stronger, broader, more intelligent and logical in his reasoning and acts. These facts have become known to thousands of men and have led to the heavy attendance in reputable schools.

Massachusetts has maintained two of the most prominent day law schools in America for a great many years, the ones at Harvard and Boston Universities. There are, however, a large number of ambitious and competent men who are employed during the day and cannot enter these universities,

and who yet desire the best equivalent. Through the co-operation of three of the leading teachers and practitioners of law, the Association Evening Law School was established and developed. Its success has been noteworthy and has earned for it the warm commendation of those familiar with the facts. Being part of a great educational system and wholly devoid of commercialism, it has been able to establish standards and maintain a grade of entrance requirements and graduation which have won for it a high position among American Law Schools. Its methods are progressive, modern and in accordance with the best practice. Its faculty are honor men of the great day schools who have not only graduated with high rank after completing an extended course in the university and law school, but have achieved success in the profession. The notable list of men on the faculty attests to the quality of work done by the school and its position among the members of the Bar.

The work of all the Association schools is absolutely non-sectarian and any man of good character, regardless of his financial or social standing or creed, is admitted on an equal footing. No evening Law School could work under better conditions and none has achieved a more enviable reputation.

Close investigation is invited by all those interested in the study of law and every opportunity will be afforded to inspect thoroughly the school, its methods, courses of study, past examination papers, lists of graduates and their present occupations.

A recent questionnaire sent to our alumni following the idea of the one issued by the Harvard Law School has shown a most gratifying advance made by our graduates in the profession, business and political life of the country and many of the men have become prominent and extremely useful.



LAW LIBRARY

# Historical Review

The Association Law School was established in 1898 in response to a demand for a school which should be so thorough in its work and conducted on such a high plane that its graduates would stand well at the Bar and be recognized as men of professional attainment and ethical standards.

Every effort has been made to establish and maintain high standards of entrance and graduation. A four years' course was announced at the outset in order that those desiring a short cut to the Bar might be deterred from entering. Students have been able, after two years of study, to pass the Bar examinations, but no official reference has ever been made to this fact, and the men have been prohibited from attempting any such intensified and necessarily superficial procedure.

The student body consists of men of ability who devote themselves to their work with marked fidelity, and upon graduation pass the Bar examinations successfully and enter practice.

The school was established through the co-operation of the Hon. James R. Dunbar, the late Prof. James Barr Ames, Dean of the Harvard Law School and Mr. Samuel C. Bennett, then Dean of the Boston University Law School. Under the direction of this board of advisors the School was organized.

## Successful Career

Being thus auspiciously inaugurated, the first evening law school of Massachusetts entered upon what has proved to be a most successful career. Twenty-six hundred and sixty-nine students have been enrolled, including clerks from the offices of leading attorneys; clerks and officers from every court in Boston; state, city and government officials; teachers and students from other law schools, in addition to a large number of able men engaged in different lines of business.

## Incorporation

In January, 1904, a bill was introduced into the Massachusetts Legislature seeking the incorporation of the school

with the power to grant the degree of Bachelor of Laws. The rapid pasasge of this bill by the Legislature and the cordial recognition and endorsement of the school by the Bench, Bar and heads of our great day law and other professional schools, testify in no uncertain tones to the position the school occupies in the educational activities of the Commonwealth.

### **High Standards**

The work of the past seventeen years has been characterized by strict and impartial administration, expert instruction and devotion on the part of the students. The success of our graduates in passing the Bar examinations, over 90 per cent of them having been successful in this and other states, and later in practice, has amply justified what may at times have seemed to be undue severity.

If passing the Bar examination were the only end to be attained, the work would be less difficult, but reputable institutions concern themselves much more with the future prospects of their students than with the fitting of any number of men for certain tests; and to this end the courses as herein announced were arranged to duplicate as nearly as possible those of the best day law schools.

The study of law requires diligent application and regular attendance at the lectures and other exercises of the school; also a large amount of reading and thought in order to comprehend clearly and to assimilate properly the many difficult problems presented. A successful lawyer must have not only a thorough knowledge of the law, but the power to apply that knowledge in each particular case, no matter how complicated the conditions may be; and it is this latter phase of the profession's requirements that makes hasty preparation of so little value to one who hopes to be successful in active practice; for, though he may in this way gain admission to the Bar, he will be incompetent to give counsel worthy the name.

### **Method of Instruction**

There are three methods of instruction employed by law schools: the lecture method, in which the instructor gives a

presentation exercise and assigns cases to be read in relation thereto; the case method, in which cases are assigned to be read in advance, which are then discussed in class and commented upon; and a combination of these two systems, in which the instructor gives a lecture or presentation of the essentials, followed by the discussion of cases previously read.

Seventeen years' experience has led the Association Law School to adopt a modification of the latter method, namely: lecture, citation and discussion, followed by a quiz. In addition, special quizzes are held several times each week by regular quiz masters, whose duty is to review the work of preceding lectures, clear up the difficult points, and assist those who require aid. The value of this method is clearly demonstrated by the success of our students at the Bar examinations and later in practice.

### **The New Year**

The school enters upon the work of 1915-16 better housed, equipped and organized than ever before. The faculty includes several additions of prominent practitioners who have achieved success in teaching and practice.

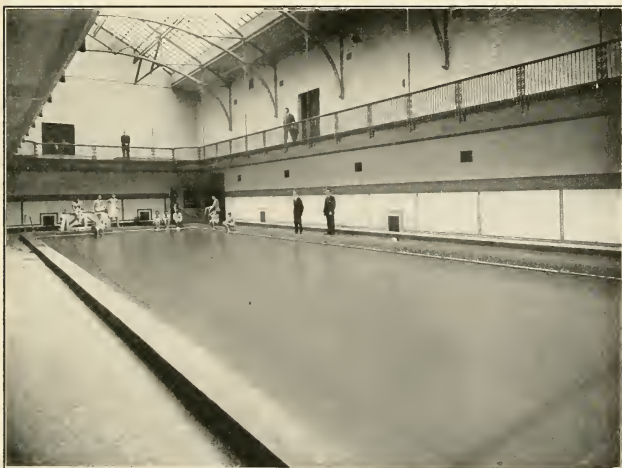
### **Greeting**

Students who desire the best, who are willing to sacrifice and work for a great ideal are invited to join our ranks. Success has come in large measure to the hundreds who have completed our courses, graduated and entered practice. It will come to you if earned. Our pleasure and privilege is to extend the hand of fellowship and assistance.





BOWLING ALLEYS



POOL

# Requirements for Admission

The legal requirements for passing the Bar Examinations in Massachusetts are clearly defined and well established. The requirements, however, along the lines of general education have been changed by law several times of late and no constituted authority seems authorized to state what the standard will be a few years hence. Being unable to secure such a statement, we are printing the requirements of 1914-15 and will adapt them to each individual case in accordance with the law in force at the time of entering the Law School.

All applicants for admission to the school must present satisfactory evidence of moral character and must be at least eighteen years of age, for admission to the work of the first year class. Graduates of colleges, technical schools, and four year courses in high schools of good standing are admitted without examination upon presentation of certificates or diploma.

Those who enter as candidates for the degree and are not high school graduates, but have attended high school for one or more terms, must present their credentials to the Chairman of the Committee on Admission to be passed upon. He will prescribe from the following course of study the necessary work to fulfil the school requirements.

## *I. English*

Reading and study similar to that required by the College Entrance Examination Board. A detailed description of the English work can be found in the catalogue of the Preparatory School.

## *II. Latin or French*

Latin — Beginners' Latin Lessons completed and the equivalent of the first four books of Caesar's "Gallic War."

French — Knowledge of the ordinary forms of construction; ability to translate simple prose and to compose in the language simple sentences based upon the matter read.

## *III. Mathematics*

Algebra, sufficient to include radical forms and quadratic equations of two unknown quantities.

#### *IV. History*

The history and civil government of Massachusetts and the United States.

#### *V. General Subjects*

Any two of the following:

1. Physics. General elementary course.
2. Chemistry. General elementary course.
3. Physiology. General elementary course.
4. Physical Geography. General elementary course.
5. Plane Geometry. Five books.
6. German (two units). Same as French.
7. Economics. Elementary course covering the principles of Economics.
8. Ancient History. History of the ancient world up to 800 A.D.
9. Spanish (two units). Same as French.
10. Mechanical Drawing. A course covering the elements of drafting, such as is usually given in six hours a week during a school year.
11. Bookkeeping. Double Entry.
12. Stenography. Principles of a standard system and ability to write one hundred words a minute.

### **EVENING PREPARATORY SCHOOL**

The Evening Preparatory School of the Department of Education has been in operation for a number of years and has fitted a great many men for the colleges, universities and Bar. Its diploma is accepted by the Bar Examiners as sufficient preparation. The school is in operation throughout the entire year, making it possible for law students to remove their academic conditions when the Law School is not in session. All conditions must be removed before entering the Senior Class of the Law School. A special pamphlet is issued by this school which may be obtained upon application. Appointments are made by addressing, The Evening Preparatory School or by telephoning Back Bay 4400.

## **Advanced Standing**

Candidates for admission to advanced standing, will file their applications and credentials regarding previous study of law with the Dean.

Students from other law schools, applying as above, will be required to present a letter from the Deans of said schools regarding their standing and general work.

Special students as announced hereafter, will be admitted to the Law School under certain conditions at the discretion of the Dean.

**SPECIAL NOTICE.** Owing to the delay each year on the part of the students and the consequent rush on the opening night, those desiring admission are requested to register during the two weeks previous to the opening of the school.

For application blanks for admission to the school, or for further information, address the Dean of the Law School.

## **REQUIREMENTS FOR THE DEGREE**

The requirements for the degree of Bachelor of Laws in point of age, period of attendance at the school, and the passing of examinations, are as follows:

At the time of receiving the degree one must have attained the age of twenty-one years.

The required period of attendance at the school is four years. One or two years' attendance at a three-year day law school may be counted as a part of the four years, but all of the examinations of the four years must be passed.

The right to take examinations, as well as the privilege of continuing one's membership in the school at any time, is conditioned upon regular attendance at the exercises of the school. Attendance at 75 per cent of the lectures in each course is required. Those failing to attend 75 per cent will be required to attain 70 as a passing mark in that subject.

All examinations must be taken at the time scheduled, and no student is allowed to present himself for examination more than once in the same subject, provided he passes at the first trial. If, for good and sufficient reason, a student finds that he will be unable to take an examination at the time scheduled, he must previously obtain permission from the Dean to take said examination at the second trial.

No student who has more than one condition standing against him on the work of the first two years will be allowed to register as a regular third-year student, and no student having any condition will be admitted as a regular student to the fourth year. He may, however, although registered as a third-year student, take and be credited with a limited number of fourth-year subjects, the number varying according to the number of his conditions.

No student who fails on account of conditions to receive his degree in due course will be permitted, except by special vote of the faculty, to remove his conditions later than two years after the graduation of his regular class.

Every person who, while a member of the school, passes a satisfactory examination in one or more subjects will be entitled to a certificate, stating the length of time he has been a member of the school, and specifying the subjects in which he has passed.

### **Special Students**

Less than 10 per cent. of the men of America graduate from high schools. When any of the remaining 90 per cent., after school age, wish to take up a profession in an evening school, they find it necessary to make up more or less high school work. Should any work of this kind be necessary, the student enters the Law School under the caption, "special student" and while taking the regular work with his class remains under this classification until his academic conditions are wholly removed.

Law schools and colleges dealing with students who come directly from the high school and who have been prepared specifically for college examinations, can be more or less arbitrary in their admission requirements, but they are becoming less so, are allowing substitutions and equivalents and instead of barring out worthy young men, are taking a much more lenient attitude and encouraging their attendance. An Evening School dealing largely with men beyond high school age seeks to be as helpful as possible to men who have been deprived of extensive educational opportunities and is justified in admitting those who though not fully prepared along academic lines,

are, in the opinion of the faculty, men of promise, aptitude and ambition and willing to meet all requirements.

The Association Law School takes this attitude and while requiring every student who is a candidate for the degree to remove all academic conditions before entering the senior class, admits capable men who are not high school graduates and then, through the Evening Preparatory School, enables them to make up these deficiencies in a thoroughly satisfactory manner. The wisdom of this procedure has been shown by the high degree of scholarship displayed by such students, the ease with which they have passed the Bar examinations and their success in the profession.

Each case is decided on its merits after conference and an investigation of the applicant's school and business experience.

# Program of Instruction

## FIRST YEAR

### *Torts*

MR. STORER                      Monday, throughout the year, 7.15-8.45

### *Common Law Pleading*

MR. HOLLIDAY                Tuesday, first half-year, 7.15-8.45

### *Criminal Law*

MR. BARRETT                  Tuesday, second half-year, 7.15-8.45

### *Contracts*

MR. McLELLAN                Thursday, throughout the year, 7.15-8.45

## SECOND YEAR

### *Property I*

MR. FIELD                      Monday, throughout the year, first half-year, 7.00-8.15; second half-year, 7.15-8.45

### *Agency*

MR. W. LLOYD ALLEN        Monday, first half-year, 8.15-9.30

### *Bills and Notes*

MR. PARKE                    Wednesday first half-year, 7.15-8.45

### *Sales*

MR. PARKE                    Wednesday, second half-year, 7.15-8.45

### *Equity I*

MR. BARNEY                  Friday, throughout the year, 7.15-8.45

## THIRD YEAR

### *Partnership*

MR. WRIGHTINGTON        Monday, first half-year, 8.15-9.30



BILLIARD ROOM



RESTAURANT



*Property II (Deeds)*

MR. MCLEOD Monday, second half-year, 7.15-8.45

*Equity II and Suretyship*

MR. BARNEY Wednesday, throughout the year, 7.15-8.45

*Corporations*

MR. NEWTON Friday, throughout the year, first half-year, 7.00-8.15; second half-year, 7.15-8.45

*Wills*

MR. NEWTON Friday, first half-year, 8.15-9.30

FOURTH YEAR

*Massachusetts Practice*

MR. MCLEOD Monday, first half-year, 7.15-8.45

*Bankruptcy*

MR. Monday, second half-year, 7.00-8.15

*Moot Court*

JUDGE LUMMUS Monday, second half-year, 8.15-9.30

*Evidence*

MR. STORER Wednesday, throughout the year, 7.15-8.45

*Constitutional Law*

MR. DORMAN Friday, first half-year, 7.00-8.15

*Property III*

MR. NEWHALL Friday, first half-year, 8.15-9.30; second half-year, 7.15-8.45

# Outline of Courses

## FIRST YEAR

### Torts

General principles; assault and battery; false imprisonment; trespass; conversion; slander and libel; enticement and seduction; deceit; slander of title; malicious prosecution; negligence, and incidental points.

Bigelow on Torts.

Ames' and Smith's Cases on Torts.

Chase's Cases on Torts.

Simpson's Cases on Torts.

### Contracts

Offer and acceptance; consideration; performance of, or promise to perform non-contract obligation as consideration; moral obligation as consideration; antecedent act or agreement as consideration; parties to a contract, including aliens, executors and administrators, guardians, infants, insane persons, intoxicated persons and married women; omitting agents, corporations and partners on account of these subjects being given in other courses; contracts under seal, including the form, requisites thereof, delivery and the matter of consideration; rights of beneficiaries under a contract; rights of assignees of a contract; conditional and unconditional contracts; rescission of contracts; damages for breach of contract.

Keener's Cases on Contracts.

### Criminal Law

Sources of criminal law; nature of crime; common law and statutory offences; criminal acts; intent in general, and as affected by circumstances, such as insanity, intoxication, infancy, coercion, ignorance or mistake; justification; necessity; agency; consent; condonation; contributory acts; domestic relations; parties in crime; jurisdiction.

Crimes against the person; against property; against public policy; health; peace; justice; decency and morality.

Criminal procedure; arrest; extradition; examination and bail; indictment and criminal pleading; trial; evidence; proceedings after verdict; error.

Beale's Cases on Criminal Law.

## **Pleading**

Common law pleading; common law actions; pleadings; their history, form and effect; the rules of pleading.

Sunderland's Cases on Common Law Pleading.

Stephen on Pleading.

Shipman on Common Law Pleading.

## **SECOND YEAR**

### **Property I**

Distinction between real and personal property; nature and acquisition of rights in personal property; acquisition of rights not under former owner; transfer of rights in personal property; possession of personal property; real property; tenure in general; division of estates; seizin and conveyances to uses and trusts; mines; wild animals; border trees; emblements; fixtures; waste; rights in another's land; natural rights; easements; covenants running with the land; public rights; franchises; rents.

Gray's Cases on Property, Vol. I and II (Second Edition).

### **Equity I**

Nature and limits of jurisdiction; the jury in equity; equitable parties; the maxims; equitable conversion; accident, mistake and fraud; specific performance of affirmative and negative contracts, including part performance, partial performance with compensation, defenses; specific reparation and prevention of torts by injunction, including particularly jurisdiction in waste, trespass, nuisance and in industrial disputes; accounting, subrogation and other pecuniary remedies.

Ames' Cases on Equity Jurisdiction, Vol. I, Parts 1-6.

Pomeroy on Equity Jurisprudence.

## **Bills and Notes**

The provisions of Revised Laws of Massachusetts, Chapter 73 (Negotiable Instruments Law). Formal requisites of negotiable and non-negotiable bills of exchange, checks and notes; obligations and rights of the various parties to such instruments, makers, acceptors, drawers, drawees, payees, indorsers and indorsees; suits upon bills and notes; pleading and defences; accommodation paper; guaranty and generally of the transfer, indorsement and extinguishment of bills and notes.

Revised Laws of Massachusetts, Chapter 73.

Colson's Hufcut on Negotiable Instruments, Second Edition.

Norton on Bills and Notes, Fourth Edition.

## **Sales**

The provisions of the Sales Act, Acts of 1908, Massachusetts, Chapter 237, codifying the Massachusetts law of sales of personal property. Sales and mortgages of personal property; subject matter of sales; when title passes; risk of loss; rights and remedies of seller and buyer in executed, executory and conditional contracts of sale; warranties of title and quality; seller's lien and stoppage *in transitu*; bills of lading and other documents of title; fraud; statute of frauds; factors and recording acts; actions and defences.

Massachusetts Acts of 1908, Chapter 237.

Woodward's Cases on Sales.

Benjamin on Sales, 7th American Edition.

Tiffany on Sales, Second Edition.

Williston on Sales, 1909 Edition.

## **Agency**

Who can be an agent; who can be a principal; what acts may be done through an agent; how an agent is appointed; the agent's power to subject his principal to liability upon contracts, for torts, crimes, etc.; the agent's liability to third parties; what parties are liable upon writings signed by an agent; undisclosed principal, including rights and liabilities

of the agent, the undisclosed principal and the third party; the duties of the principal and agent to each other; termination of an agency; ratification.

Wambaugh's Cases on Agency.

### THIRD YEAR

#### **Equity II**

Nature and requisites of a trust; a trust distinguished from a debt, bailment, equitable charge, etc.; language necessary to create a trust; consideration; the Statutes of Frauds and of Wills; subject-matter of a trust; the *cestui que* trust; the trustee; nature of the *cestui que* trust's interest; transfer of trust property, rightful and wrongful; extinguishment of a trust; duties of the trustee; constructive and resulting trusts.

Ames' Cases on Trusts.

#### **Property II (Deeds)**

Acquisition of real property *inter vivos*, original acquisition; lapse of time; statute of limitations; prescription; form of conveyance; description of property granted; boundaries; estates created; incorporeal hereditaments; covenants for title; execution of deeds; signing and sealing; delivery; estoppel; dedication.

Gray's Cases on Property, Vol. III (Second Edition).

#### **Wills**

Kind of wills; testamentary power; beneficiaries; property given; who may make a will; contract to make a will; form of will; incorporation of outside documents; signing; witnesses; publication; mistake; fraud; undue influence; revocation; republication; grant of probate and administration; the estate of an executor or administrator; alienation of administrators and executors; legacies; distribution; construction.

Costigan's Cases on Wills.

Gray's Cases on Property, Vol. IV (Second Edition).

#### **Corporations**

Nature of a corporation; difference between corporation and partnership; distinction between stockholders and corpora-

tion; promotion of corporations; formation of corporations; corporations *de jure*; corporations *de facto*; dissolution of corporations; interpretation of charters; powers of a corporation; doctrine of *ultra vires*; liability for torts and crimes; corporation and the State; shares of stock, dividends; rights of stockholders; stockholders' liabilities; voting rights of stockholders; voting trusts; rights and liabilities of directors and officers; rights and remedies of creditors against property of corporations; foreign corporations.

Canfield and Wormser's Cases on Private Corporations.

### **Partnership**

The creation of a partnership; *quasi* or nominal partners; the partnership property and the interest of a partner therein; rights and remedies of creditors; the power of a partner to act in behalf of the partnership, before and after dissolution; rights and duties of partners *inter se* and actions between partners; dissolution and termination of partnership; accounting and distribution.

Ames' Cases on Partnership.

George on Partnership.

Lindley on Partnership.

### **Suretyship**

Comprising the rights and obligations subsisting among the three parties involved in a suretyship transaction, namely, principal obligor, surety and creditor.

Ames' Cases on Suretyship.

## **FOURTH YEAR**

### **Evidence**

Judicial notice; judge and jury, or law and fact; burden of proof; presumptions; admissions; confessions; principles of exclusion; relevancy; character evidence; hearsay evidence and exceptions thereto, including declarations as to matters of pedigree, matters of public interest, public records, declarations in regular course of business, account-books, declarations against interest, *res gestae*, dying declarations, declarations

made under oath, declarations showing physical or mental conditions; opinion evidence; best evidence; writings as evidence; examination of witnesses.

Greenleaf on Evidence.

McKelvey on Evidence.

Thayer's Cases on Evidence.

Wilgus' Cases on Evidence.

### **Property III**

First half-year: Conditional and future interests in real and personal property, including conditional estates, reversions and remainders, rule in Shelley's Case, and rule against perpetuities; forfeiture and restraints on alienation.

Second half-year: Priority and registration, mortgages, landlord and tenant, and joint ownership.

Gray's Cases on Property, Vol. V and VI.

Gray's Rule against Perpetuities.

Gray's Restraints on the Alienation of Property.

### **Constitutional Law**

Written and unwritten constitutions; history and sources of written constitutions in the United States, state and national; establishing and amending constitutions; distribution of powers between the national and state governments; distribution of powers among the three departments; theory and consequences of this distribution; the judicial department; nature of judicial power; jurisdiction of the federal government, criminal and civil; express, implied and resulting powers; citizenship; civil and political rights; the police power; the right of eminent domain; taxation; impairment of contracts, *ex post facto* and retrospective legislation generally; regulation of commerce.

Thayer's Cases on Constitutional Law.

Cooley's Principles of Constitutional Law.

McClain's Cases on Constitutional Law.

Boyd's Cases on Constitutional Law.

### **Bankruptcy**

History of bankruptcy legislation, state and national, extent and operation of state insolvency laws; who may

become a bankrupt; who may be petitioning creditors; acts of bankruptcy, including fraudulent conveyances, preferences and assignments for the benefit of creditors; what property passes to the trustee; dissolution of liens; what claims are provable against the bankrupt's estate; duties and powers of the trustee; duties of the bankrupt; discharge from bankruptcy; compositions in the bankruptcy court; bankruptcy procedure.

United States Bankruptcy Act of 1898, with amendments.  
Collier on Bankruptcy.

Williston's Cases on Bankruptcy.

### **Massachusetts Practice**

Courts in Massachusetts and jurisdiction of each; venue of actions, local and transitory; writs, including service of same; arrest on mesne process and on execution; attachment on mesne process and by trustee process; what property is exempt; entry of actions; appearances; non-suit and default; pleadings, including declaration, answers, demurrers, etc.; set-off, recoupment and cross actions; tender; offer of judgment; interrogatories; depositions; masters and auditors; trial; exceptions; motions for new trial; motion to vacate judgment; writs of review, error and *audita querela*; appeals; execution; replevin; summary process to recover land; writ of entry; mechanics' liens; extraordinary writs; Statute of Limitations; equity pleading and practice; probate practice; marriage and divorce.

Buswell and Walcott on Massachusetts Practice.

### **Moot Court**

In response to an urgent demand, a Moot Court will be conducted the last half of the year by Judge Lummus. This court will take up the preparation of cases, the filing of various papers and general court procedure.

Many of the best Law Schools in the country are now offering such laboratory courses with evident success. Our endeavor will be to have this course deal with those branches of the profession with which the graduate just entering prac-



tice is largely unfamiliar, but which are essential for the proper preparation and trying of cases.

## SPECIAL COURSES

### Use of Lawbooks

A need which is keenly felt by all law students and young practitioners is met by this practical laboratory course on the use of lawbooks, the purpose of which is to teach the student how to find rapidly and accurately the answers to such legal questions as actually arise in the practice of law. By showing him how to search for and exhaust properly the authorities in point, and how to analyze, criticize, and abstract the decisions thus found, the course will enable the student when he starts out to practice law, to guard against many serious errors and to save hours of valuable time. The course will be open to the undergraduates and the graduates of the school.

Theory underlying unwritten law; imperative and persuasive authority; doctrine and dicta; abstracts of cases; criticism of cases; fundamental rules of statutory construction; analysis of facts; provisional hypotheses; examination of statutes; use of digests, encyclopaedias, textbooks, and general searchbooks.

The special course of lectures requested by our alumni and members of the Bar, successfully opened in 1914-15, will be continued the coming year. These will consist of subjects not included in our regular program, but will deal with special subjects of interest to practitioners.

Among the subjects treated will be:

Legal Ethics.

Public Service Corporations and Carriers.

Court Procedure.

Insurance.

Probate Procedure.

Conveyancing.

Admiralty, etc. etc.

# General Information

## Quizzes

In addition to the formal lectures the students meet regularly throughout the year for a systematic review of the material covered by the regular lectures. These "quizzes" are conducted by experienced instructors.

Students are also encouraged to form quiz clubs among themselves, since in law, as in other branches of knowledge, discussion develops mental power.

## Examinations

Written examinations are regularly held during the months of February and May. Those failing to pass these examinations, also applicants for advanced standing, are required to present themselves for examination in September. The examination schedule for September, 1915, will be found on page 3.

## Tuition

The rate of tuition is \$75 per year, payable \$25 on entrance, \$25 on November 15 and \$25 on January 15. This fee includes membership in the Association. Candidates for the degree are assessed \$5 as a graduation fee.

Single subjects when authorized, will be charged for at the rate of \$25 for eight, and \$15 for four months' courses, not including membership in the Association.

## Text-books

Text or case books are required in most of the courses. These books may be purchased by the student, or, if convenient, the books of the Law Library may be used in the building. It is advantageous for a student to own the books in order that he may better employ his hours at home.

Note books and general supplies may be obtained at the office at reasonable rates.

## **Notes**

Students are required to take notes of all lectures in person and to be prepared to hand in their note books for examination when called for.

## **Law Library**

The Law Library is located in the Administration Building and is large, well equipped and beautifully furnished. In it may be found case and text books on all of the subjects taught in the school as well as on related subjects, the State Reports of Massachusetts and New York, the English Reports, United States Supreme Court Reports, etc. The Library is open daily from 9 A.M. to 10 P. M., and is kept thoroughly up-to-date.

## **Class Rooms**

The school has attractive class rooms with diffused light, comfortable furniture and good ventilation.

## **Dormitories**

Nearly three hundred dormitories are provided where men may live with all the comforts of a great hotel. Students may enjoy any or all of these comforts at a minimum charge.

## **Physical and Recreative Opportunities**

An enthusiastic and inexperienced man eager to gain admission to the Bar as soon as possible will exclaim when the gymnasium or social features are mentioned, "I have neither time nor inclination for these, what I wish is the study of law first, last and all the time." This attitude is perfectly natural, and we have heard the remark hundreds of times, but the point is not well taken and often leads to disastrous results. An employed man who is giving adequate service for his wages is tired when the day's work is over and for him, to add the burden of an Evening School course, of necessity implies an overload. Most men can carry this load without difficulty, however, if they adjust their lives to the new order of things, and take on in addition to the school work, other features which offset the strain.

The study of law is a man's work, requiring close application, a clear head and persistent effort. In order to do the work successfully, pass the examinations and finish the four years in good physical condition, one must find time for physical exercise and a reasonable amount of recreation and social enjoyment.

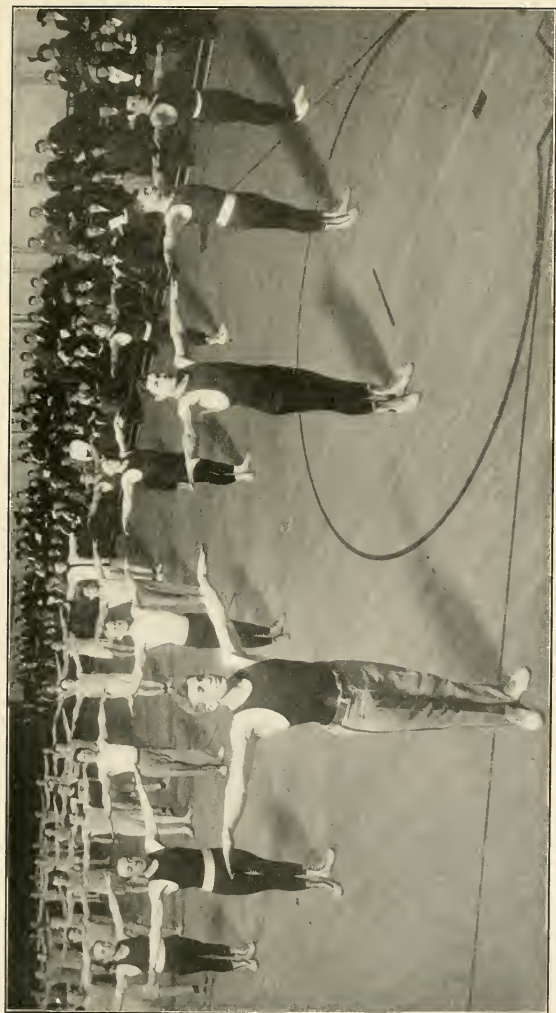
The Association Law School is the only one of its kind which can meet these conditions fully, owing to its magnificent equipment and great diversity of features. The Law School is all that science, years of experience, high ideals and careful attention to detail can make it, and it is backed by a physical department and social features of the most attractive and valuable nature. The hours are such that men may go from their business to the building, take some light exercise in the gymnasium, or a plunge in the pool or a shower bath and after a light lunch, go to their class rooms with minds receptive, active and capable of obtaining all that the courses offer. We impress all our students with the necessity of a well-balanced program, mental, physical and social, and hundreds of our men avail themselves of these advantages. The same reasons which lead the colleges to expend vast sums for the physical and social development of their students actuate us. Our gymnasium, the largest in New England, affords every opportunity for keeping in fine physical condition. The swimming pool, bowling alleys, billiard room and general library, game rooms and special exercise rooms, fencing, boxing indoor golf, all contribute to the development of the student.

The Association restaurant supplies unusually satisfactory service at reasonable cost.

### **Social Life of the School**

Among the prominent and valuable features of the Association Law School is the opportunity for forming the acquaintance of influential men attending the Law and other Association schools. Lectures, receptions, "get together" meetings and joint meetings with the School of Commerce and Finance occur throughout the year.

Baseball, bowling and billiard teams will compete the coming year.



GYMNASIUM

A course in Public Speaking is given each year by a trained instructor.

The Congress, consisting of an unusually able body of men, offers opportunities for debate, discussion and extemporaneous speaking.

The Law School is the only evening school of the kind which provides the finest advantages along legal lines and at the same time, the attractive features found in the great universities. The student, therefore, not only obtains a thorough legal training, but enjoys these stimulating and refining influences by coming in contact with thousands of congenial, ambitious and high grade men who are pursuing the various branches of knowledge offered by the Association school system.

Strikingly effective are the opportunities and wholly unlike those of a small public or private school which offers only the professional side of any subject, of necessity omitting the social, physical and recreative features so valuable in preserving a proper balance and symmetrical development.

The Evening Law School offers the advantages of a high grade Law School and a University and is irresistible in its appeal to discriminating men.

# New Building

In the fall of 1913 we moved into our magnificent new building on Huntington Avenue, opposite the Opera House, the land, buildings and equipment costing in the vicinity of one million five hundred thousand dollars. It is the finest group of buildings of the kind in existence consisting of the

## Administration Building

in which are located the lobby, administration offices, directors' room, committee rooms, library, reading and social rooms.

## Bates Hall

seating five hundred, with a large stage and complete equipment.

## Educational Building

One hundred and ninety-six by fifty-six feet and six stories high, containing over thirty class rooms, laboratories, social and club rooms, and the small assembly hall.

## Natatorium

containing one of the largest swimming pools in America. The pool is 75 feet long by 25 feet wide and is under a glass roof admitting floods of light and sunshine and is supplied with filtered salt water.

## Gymnasium

with running track, twelve laps to the mile, special exercise rooms, hand ball and squash courts, indoor golf, six bowling alleys, shower baths, special rooms for fencing, wrestling, etc.

## Industrial Building

containing machine shop, electrical laboratories and industrial plant.

# Alumni Association

"The object of this Association shall be to advance the cause of legal education, to promote the interests and increase the usefulness of the Boston Y. M. C. A. Law School, to work for the welfare of the community at large, and to promote mutual acquaintances and fellowship among all members of the Association."— *Constitution, Article II.*

Early in the spring of 1912, the Alumni Association, which had been in existence for many years, took on new life, elected officers and outlined a program for the year.

Several matters of importance have been projected and put into operation, including a course of supplementary lectures, given to the undergraduates and a course of graduate lectures on Conveyancing, given by Messrs. Charles Rackemann, Frank W. Grinnell, Alfred C. Vinton, and Francis N. Balch.

The Alumni Association is completing plans for a series of receptions to the undergraduates, the creation of a scholarship fund, and other important matters. All graduates of the Law School are cordially invited to unite with the Association and benefit by the good fellowship as well as the professional advantage of being closely identified with over four hundred practicing attorneys.

## Officers

President—Francis W. Kimball, '08

Vice-Presidents—John Quinn, Jr., '06

Timothy J. Buckley, '02

Joseph T. Brennan, '04

John J. Attridge, '05

Herman A. McDonald, '10

Secretary—Asa S. Allen, '12

Treasurer—Chester W. Pike, '11

## Council

### *Term ending 1915*

George P. Hitchcock, '10

Alfred M. Weismann, '11

Arthur L. Woodman, '06

### *Term ending 1916*

Harry A. English, '11

John Speirs, '03

James E. Farrell, '08

### *Term ending 1917*

F. Chester Everett, '09

Robert B. Mount, '14

Philip A. Carroll, '13

### *Term ending 1918*

George W. Hopkins, '08

Fernald Hutchins, '07

James P. Roberts, '12



# Graduates

The following men have been granted the Degree of LL.B.,  
in previous years:

CLASS OF 1902		Admitted to the Mass. Bar
Name	Residence	
Charles Bartlett	Boston	1901
*William Williams Bartlett	Roxbury	
Corrill Ellsworth Bridges	Charlestown	1902
Dennis Francis Buckley	Georgetown	1903
Timothy John Buckley	Charlestown	1902
Timothy Francis Collins	Arlington	1902
Frederick A. Gaskins	Milton	1903
William John Greene	Cambridge	1902
Mederic Guilbault	Medford	1903
George Latimer	Boston	1903
John Bailey Loring	Dorchester	1901
Charles Henry Lutton	South Boston	1902
Edward MacHarrie	Somerville	1902
George Alexander McKinnon	Cambridge	1902
George Henry Magurn	East Boston	1903
William Peyton	Boston	1902
Joseph Louis Philip St. Coeur	Cambridge	1902
James Joseph Sheehan	Peabody	1902
James Boniface Valley	Cambridge	1902

CLASS OF 1903		
Robert Ross Thompson Bower	Boston	1903
John Henry Coakley	Chelsea	1903
Arthur Lester Connolly	Boston	1903
Edwin Horace Cooley	Brookline	1903
Isidor Fox	Revere	1903
Walter William Graves	Salem	1902
Reginald Hainsworth	Cambridge	1903
John Edward MacKinnon	East Boston	1903
Francis Louis Maguire	Arlington	1903
Frederick William Otto	Dorchester	1902
George Whitehouse Reed	Roxbury	1903
Julian Seriack	Dorchester	
John Speirs	Dorchester	1902

CLASS OF 1904		
Grosvenor Tarbell Blood	Newburyport	1904
Joseph Thomas Brennan	Cambridge	1904
Frederic Carroll	London, England	1904
Alfred Pugh Clark	Allston	1904
Charles Carthage Connor	New Bedford	1904
James William Dolan	Waltham	1904
Peter Jefferson Donaghue	Dorchester	1904
Michael Lawrence Fahey	Charlestown	1904
Carl Gerstein	Boston	1904
August George Gutheim	Washington, D.C.	1904
William Barton Jensen	East Boston	1904
Leo Sidney Jolles	Roxbury	1904
Louis Levin	Boston	1905
Thomas Francis Mansfield	East Boston	1904
George Yenetchi Parker	Charlestown	1902

Ralph Merrill Smith	Somerville	1904
Arthur Asher Sondheim	Roxbury	1904
Henry George Spence	Roxbury	1904
William Joseph Welch	Roxbury	1905
David White	Boston	1904
Jonathan Breck White	Watertown	1904

#### CLASS OF 1905

John Joseph Attridge	Boston	1906
Walter Watson Chambers	East Dedham	1906
John McLean Crawford	Charlestown	1905
John Francis Dunn	Dorchester	1907
John Henry Ells	Dorchester	1904
Horace Porter Farnham	Peabody	1905
John Gregory Fortune	Malden	
Morris Burton Frankel	Boston	1905
Isaac Gordon	Boston	1905
Samuel Hurwitz	Roxbury	1905
Abram Hyman	Boston	1906
Bernard Charles Kelley	South Boston	1907
Hugh Boniface McEachern	South Boston	1907
Leonard Wesley Parker	Boston	1906
Joseph Albert Sedgwick	Quincy	
William Payson Smith	Dorchester	1905
Daniel Sullivan, Jr.	Boston	
Ralph Lewis Theller	Cambridge	1911
Arthur William Vaughan	Somerville	1905
Alonzo Ernest Yont	Dorchester	1904

#### CLASS OF 1906

Henry James Angell	California	1906
Sanford Bates	Dorchester	1906
Philip Anthony Brine	Somerville	1906
Dennis Francis Carpenter	Dorchester	
William Francis Connor	Waltham	1906
John Cornelius Cronin	South Boston	1906
Patrick Joseph Dowd	Waltham	1906
Michael Joseph Doyle	Boston	1906
John Mix Finch	Everett	1907
Hamlet Samuel Greenwood	Lowell	1906
John Hamilton, Jr.	Jamaica Plain	1907
Edward Warren Harnden	Boston	1906
John Michael Hayes	Dorchester	1906
Walter Lawrence Hobbs	Boston	1906
Albert Edward Hughes	Somerville	1907
*Charles Sumner Johnson	South Boston	
Thomas Kelley	Boston	1905
Percy Francis Lannon	Rosindale	1907
George Henry Locke	Colorado	
James Alvin McKibben	Dorchester	1905
Thomas Joseph Maloney	Charlestown	1906
Peter Francis Minnock	Waltham	1906
Francis Maloney	Charlestown	1906
Stephen Francis Morgan	Charlestown	1906
Hubert Aloysius Murphy	Dorchester	1905
John Quinn, Jr.	Boston	1906
John Edward Quinn	Cambridge	1906
Ernest Orlando Raymond	Somerville	1906
Henry Burgess Roberts	Somerville	1906
John Francis Rogan	Charlestown	1905
Charles Henry Rogers	New York	1906

Samuel Rothblum	Dorchester	1906
Joseph Francis Sullivan	Charlestown	1906
John Foster Tufts	Watertown	1908
Arthur Lorrin Woodman	Cambridge	1906

#### CLASS OF 1907

George Pomeroy Anderson	Boston	1909
William Henry Barter	Dorchester	1907
*Charles Currier Beale	West Medford	1907
Roscoe Hosmer Belknap	Frammingham	
Thomas Francis Brennan	Cambridge	1908
Michael John Carey	Somerville	1908
John Joseph Coady	Dorchester	1906
Daniel Francis Cunningham	Brighton	1907
Maurice Francis Cunningham	Cliftondale	1907
Michael John Dennen	Winchester	1907
Daniel John Daly	Brookline	1907
John Henry Devine	Brighton	1907
Albert Coolidge Eames	Boston	1908
Walter Frank Foss	Norwood	
Harry LeRoy French	Waltham	1907
Martin Gilbert	Roxbury	1908
Dennis William Haggerty	Boston	1907
Daniel Melbourne Herlihy	Boston	1907
William Hirsh	Dorchester	1907
William Jason Holbrook	South Weymouth	1906
*John Hughes	Boston	
Fernald Hutchins	Dedham	1907
Loring Pierce Jordan	Boston	1907
Arthur Francis Keefe	Everett	1907
Thomas James Lawler	Dorchester	
Everett Charles Lewis	Medford	1907
Frederick William McEnery	Cambridge	1907
Bernard Francis Murphy	Waltham	1909
Edward Clarence Ramsdell	Brighton	1907
Daniel David Rourke	Boston	
Koran Calvin Small	Waltham	1906
William Joseph Stone	Dorchester	1908
Frank Brown Swain	Brockton	1907
Edward Armstrong Thomas	Winthrop	1908
Henry Partick Trainor	Waltham	1906
Abraham Hermann Weinstein	Boston	1906
James William Wickwire	Dorchester	1907
Edward Hermann Ziegler	Roxbury	1906

#### CLASS OF 1908

Arthur Wykeham Ashenden	Dorchester	1909
Benjamin Franklin Beale	Boston	
Edward Sherman Bennett	South Boston	1908
Francis Henry Blackwell	Boston	1907
Robert Campbell	Boston	1908
Henry Elton Chamberlin	Boston	
Francis Aloysius Cronin	Roxbury	
William John Daly	Winchester	1907
John Bernard Dayton	Somerville	1908
James Michael Driscoll	Brookline	1907
James Edward Farrell	West Newton	1908
Charles Augustus Ferguson	Malden	1909
Edward Ferguson	Cambridge	1909

Edward Richard Flavell.....	Boston	
Wallace Alfred Gleason .....	West Roxbury	1908
Michael Aloysius Henebery.....	Worcester	1908
George Willard Hopkins.....	Concord	1909
Charles Edward Houghton .....	Hyde Park	1909
Morris Jolles .....	Roxbury	1908
Max Manuel Kalman.....	East Boston	1910
Richard Ernest Kent .....	East Boston	1908
Francis Warren Kimball .....	Chelsea	1908
*Howard Newton Legate.....	Roxbury	1908
Harrison Loring, Jr.....	Roxbury	1908
Edwin Tibbetts Luce.....	Arlington	1908
Edward Aloysius McEttrick.....	Brookline	1907
Charles Leroy Moore.....	Malden	1907
Thomas Vinson Nash.....	Weymouth	1910
William Nelson .....	Boston	1907
Edward Waterman Raymond.....	Boston	
Fred Louis Roberts.....	West Somerville	1909
Elmer Gould Royce .....	Northboro	1909
Charles Marcus Smith.....	Boston	1908
Robert William Stanley.....	Boston	1908
Thomas Francis Sullivan.....	Cambridge	1910
Nelson Barnard Todd.....	Lynn	1908
Frank White Tucker .....	Somerville	1908
George Edward Walker.....	Wakefield	1908
Jacob Wasserman.....	Boston	1907
Otto Aloysius Wehrle.....	East Boston	1908

#### CLASS OF 1909

Thomas Donald Adair.....	Roxbury	1909
Henry Nathaniel Andrews.....	Boston	1909
Williams Brooks Baker .....	Danvers	1910
Gilbert Bezanger.....	Winthrop	1909
Thomas Herbert Bilodeau.....	Boston	1909
Henry Victor Charboneau.....	Lowell	1909
Charles Alfred Colton.....	Winthrop	1909
Henry Wesley Davies.....	Ballardvale	1908
Samuel Davis.....	Boston	1907
Ernest Doane Easton.....	Providence, R. I.	
Chester Everett.....	Boston	1909
David William Everett.....	Boston	1909
Andrew Franklin Faden.....	Jamaica Plain	
Thomas Jefferson Fitz .....	Melrose Highlands	1911
William Philip French.....	West Somerville	1908
Don Gleason Hill, Jr.....	Dedham	1909
Perry Brooks Howard.....	Watertown	1910
William Francis Howard.....	Dorchester	1909
Lawrence Woodbury Huse .....	Boston	1909
Daniel Francis Lynch.....	Roxbury	
James Francis McDermott .....	Boston	1909
Frank Eliot Marble .....	Lynn	1910
George Nelson.....	Boston	1910
William Ignatius Norton.....	Boston	1909
Charles Joseph O'Connell .....	Worcester	1909
James Lewis Roche.....	Lincoln	1909
George Edward Roewer, Jr.....	Boston	1909
William DeForest Ross .....	Wollaston	1909
William Thomas Salter .....	Boston	1909
Arthur Lawrence Stevenson .....	Newton	1908

William Booth Stevenson	Newton	1909
James Aloysius Sullivan	Boston	1909
Dana Scott Sylvester	Boston	1909
James Irwin Tucker	West Somerville	
Alexander Thurrott Walker	Forest Hills	1909
Robert Winthrop Young	Boston	1909

#### CLASS OF 1910

Walter Pennington Abell	Roslindale	1910
William Antcliffe Bellamy	Taunton	1910
John Bianchi	Newtonville	1910
Lyman Warren Brooks	Watertown	1911
William Herbert Burke	Worcester	1911
Ralph Norman Butterworth	Revere	1909
James William Byron	Concord	1910
John Bernard Canfield	Newton	1910
George Henry Carrick	Cambridge	1910
James Thomas Carter	Dorchester	1910
Fred William Cousins	Medford	1910
Adolph Isaac Dinner	Roxbury	1910
Shirley Howe Eldridge	Waltham	
William Caleb Frye	Winthrop	1910
Clarence Jesse Funnell	Boston	1909
Jos. Julian Orphee Gingras	Lynn	1910
Walter Howard Gleason	Watertown	1910
Ralph Clifton Glidden	Reading	1910
*Thomas Max Gurin	Boston	1911
Frank Howard Hallett	Dorchester	1910
John Emmett Hanlon	Dorchester	1910
Thomas Aloysius Henry	Salem	1910
William Martin Henry	Salem	1910
Jeremiah George Herlihy	Roxbury	1910
Ralph Eugene Hiland	Everett	1910
George Preston Hitchcock	Brookline	1910
Jesse Allen Holton	Boston	1910
William Everett Horne	Quincy	1910
Guy Atwood Jackson	Dorchester	1910
George Marshall Jewell	Everett	1910
Louis Agassiz Jones	West Somerville	1910
Wilbur Aaron Jordan, Jr.	Dorchester	1910
Maurice Kronick	Boston	1910
Henry Lawrin	Boston	1910
Harold Wesley Loker	Swampscott	1910
Herman Albin MacDonald	Beverly Farms	1910
James Preston Mackin	Boston	1912
Patrick Joseph Madigan	Boston	1910
Frederick Huntley Magison	Haverhill	1910
Augustus Vincent Murphy	Dorchester Centre	1910
Alexander William Murray	Cambridge	1910
Albert Leslie Partridge	Waltham	1910
William John Pike	Chelsea	1910
Peter Ratzkoff	Roxbury	1910
Arthur Bickford Rigney	Haverhill	1910
Allan Robinson	Revere	1910
Elmer Ernest Spear	Everett	1911
James William Sweeney	Quincy	1910
James William Spicer	Melrose Highlands	
Israel Mark Ullian	Roxbury	1910
Robert Comey Van Amringe	Roxbury	1910

John Joseph Ward	Medford	1910
Maynard Addison Wood	West Somerville	1910
Frank Hubert Wright	Boston	

#### CLASS OF 1911

David James Aaron	Allston	1911
Philip Julius Aaronofsky	Roxbury	1911
John Alfred Anderson	Boston	1911
Charles William Babson	Dorchester	1911
Edward Holbrook Baker, Jr.	Cambridge	1911
George Grant Brayley	West Somerville	1910
Leslie Nicholas Brock	Cambridge	1911
Winslow Page Burhoe	Somerville	1910
Richard Walter Burnes	Everett	1911
Moses Caplan	Boston	1911
Hugh Augustus Carney	Roxbury	1911
Benjamin Harrison Chertok	Dorchester	1911
Edgar Weston Cobb	Medford	1911
Joshua Aaron Crawford	Boston	1911
Otis John Auguste Dionne	Walpole	1911
Harvey Alexander English	Jamaica Plain	1911
Percival Fitzgerald	Mattapan	1912
David Flower	Roxbury	1911
William Forbes	Boston	1911
William Joseph Geegan	West Newton	1910
William Francis Hill	Dedham	1911
Henry Hopkinson	Jamaica Plain	1911
Frederick Austin Kennett	Dorchester	1911
Alfred Carl Malm	Brighton	1911
Frederick William McGowan	Medford	1911
John Henry Mattson	Lynn	1910
Andrew Potter Nichols	Fall River	
Orton Abner Peck	Boston	1911
William Henry Peterson	Cambridge	1911
Chester William Pike	Dorchester	1912
John Isaac Preston	Wakefield	1911
George Prussian	Roxbury	1911
Frederick Robinovitz	Boston	1911
John William Roome	Dorchester	
Louis Joseph Rouleau	Jamaica Plain	1911
William Theis Smith	Somerville	1911
Edmund Michael Stanton	Roxbury	1912
Theodore Einar Stevenson	Roxbury	1910
George Burchstead Tinkham	Roslindale	
Lewis Augustine Twitchell	Dorchester	
Calvin John Upham	Dorchester	1911
Samuel Parsons Vatcher	Lynn	1911
Howell Brackett Voight	Dorchester	
James Andrew Waters	Newton Centre	1910
Alfred Mayer Weismann	Jamaica Plain	1911
Augustine Walter Welch	Watertown	1911
Alfred Little West	Somerville	1911
Charles Chester Willard	Cambridge	1912
Ralph Howard Willard	Boston	1911
James Graham Wolff	Allston	1911

#### CLASS OF 1912

Asa Samuel Allen	Roxbury	1912
Harry Lee Bagley	Brookline	1912
James Thomas Baldwin	East Braintree	1912

Charles Edward Baltzo .....	Melrose	
Henry Albert Bascom .....	Malden	1912
William Henry Bazley .....	Everett	1912
Samuel Tompkins Bennett .....	Malden	1912
Robert Edward Bigney .....	South Boston	1912
John Joseph Burke .....	Boston	1912
Warren Frederick Card .....	Lynn	1912
Cyrus Stewart Ching .....	Boston	1912
George Cohen .....	Somerville	1912
John Joseph Conway .....	West Roxbury	1912
Lester Wilkins Cooch .....	Everett	1912
Ralph Bertrand Currier .....	Chelsea	1912
Wilfred James Doyle .....	Mattapan	1912
Leo Joseph Dunn .....	Roslindale	1911
John William Eldracher .....	Boston	1912
George Robert Ellis .....	Foxboro	1912
Norman Farquhar .....	Boston	1912
Philip Joseph Feinberg .....	Boston	1912
Frank Hervey Fittz .....	Waltham	1912
Frank Freundlich .....	Boston	1912
John Francis Gannon .....	Worcester	1912
Abraham Goldberg .....	Boston	1911
Harry Klauser Good .....	Roxbury	
Charles Emmett Gorman .....	Roslindale	1912
Reuben Bertram Gryzmish .....	Boston	1912
Charles Edward Halliday, Jr. ....	Lynn	1912
John Joseph Haney .....	Medford	
Joseph Charles Hannon .....	West Newton	1912
Edward Lavant Harris .....	Arlington	1912
Walter Joseph Hendrick .....	Boston	1912
Frederick Hoitt .....	Boston	1912
Gustav Fredinand Hollstein .....	West Roxbury	
William Frank Joseph Howard .....	South Boston	1912
Myer Harry Isaacson .....	Dorchester	
Walter Scott Jardine .....	Arlington	
Frank Roland Keith .....	Dorchester	1912
Luke Joseph Kelley .....	Jamaica Plain	
Samuel Thomas Lakson .....	East Boston	1912
Timothy Francis Leonard .....	Charlestown	1913
Finch Elbert Lewis .....	West Somerville	1912
Henry Nathaniel Longley .....	East Braintree	1912
John Michael Lyons .....	East Weymouth	1912
Thomas Bernard McCaffrey .....	Brookline	1912
William John MacInnis .....	Gloucester	1912
Abner Sterling McLaud .....	Lynn	1912
Arthur Hawes McLean .....	Dorchester	1912
John Cornelius Mahoney .....	Worcester	1913
William Raymond Mahoney .....	Cambridge	
George Albert Mansfield, Jr. ....	Waltham	1912
Leslie Rogers Moore .....	Newton	1912
Alexander Nagle .....	Boston	1912
Reginald Ebenezer Peters .....	Cambridge	1911
Benjamin Rabalsky .....	Boston	1911
Arthur Elmer Reimer .....	South Boston	1912
Ralph Henderson Robb .....	Boston	1912
James Percy Roberts .....	Dedham	1911
Francis James Rogers .....	East Boston	1912
Michael Seretto .....	Boston	
Leon Leland Silbert .....	Roxbury	1911
Nicholas John Skerrett .....	Worcester	

Walter McCabe Smith.....	Cambridge	1912
George Edwin Stebbins.....	Boston	1911
Richard Rogers Sullivan.....	Charlestown	1912
James Francis Terry.....	Boston	
Ralph Carl Thulin.....	Brighton	1912
Frederick J. Turner.....	California	
Nathan Ullian.....	Boston	1912
Joseph Vecchioni.....	Boston	1912
Charles Gordon Whitcomb.....	Allston	
Harold Willis.....	Brookline	1912
Edward Joseph Ziegler.....	East Dedham	1912

#### CLASS OF 1913

Frank Auchter.....	Boston	1913
Daniel Asher.....	Worcester	1912
Harold Clifton Berry.....	Dorchester	
Walter Francis Blaser.....	Somerville	1913
Edgar Alden Bowers.....	South Framingham	
Aaron Philip Brest.....	East Boston	1913
Philip Augustine Carroll.....	Dorchester	1913
William Joseph Carroll.....	Cambridge	1913
Fred Martin Colby.....	Everett	1913
Robert Shaw Corrigan.....	Natick	1913
Lyman Croan.....	Roxbury	1913
John Dodd Daly.....	Salem	1913
John Patrick Dimond.....	South Boston	
Roy Leslie Duren.....	Boston	
Fred Winslow Fisher.....	Medford	1913
James Francis Flaherty.....	Brighton	1913
James C. Flannery.....	Boston	1913
John Daniel Fogarty.....	Roxbury	1913
John Charles Gilbert.....	West Somerville	1913
Morris Hillel Freedson.....	Roxbury	1913
Alfred Raphael Ghiloni.....	Marlboro	1913
Martin John Heiligmann, Jr.....	West Roxbury	1913
*Ralph Waldo Hobbs.....	Quincy	1913
George Frank Howland.....	South Framingham	1913
Lewis Hyman.....	South Boston	1913
Paul Norris Jewett.....	Dorchester	1913
William Francis Johnston.....	Somerville	1912
Max Jolles.....	Roxbury	1912
George William Kenney.....	Wakefield	1913
Albert Edwin Lamb.....	Melrose	1913
A. Robert Martin.....	Forest Hills	1913
James Gervin Moran.....	Mansfield	
Michael Joseph Mulkern.....	South Boston	1913
Norman David Nechtovich.....	Boston	1913
John Saunders Climo Nicholls.....	East Boston	1913
Joseph Sanderson Pickford.....	Dorchester	1913
William Amber Reed, Jr.....	Chelsea	1913
James Frederic Rollins.....	Dorchester	1913
Josiah Hirsh Rosenberg.....	Boston	1913
Israel Ruby.....	Chelsea	1913
Benjamin Joseph Shoolman.....	Malden	1913
William David Stein.....	Malden	1913
John Gerald Sullivan.....	Medford	1913
Daniel Gordon Thompson, Jr.....	Hyde Park	1913
James Frederick Tobin.....	Roxbury	1913



Carlton Walen Wonson .....	Boston	1913
Jacob Benjamin Zuckernik .....	Boston	1913

#### CLASS OF 1914.

Robert Ernest Archibald .....	Dorchester	1913
Charles Elmer Bartlett .....	Boston	1913
Samuel Bergson .....	Dorchester	1914
John Thomas Comerford .....	Brookline	1913
Thomas Francis Connolly .....	Roslindale	1914
Samuel Henry Davis .....	Reading	1913
Clement Charles Desaulniers .....	Salem	1915
William Benjamin Doggett, Jr. ....	Dorchester	
James Michael Downey .....	Dorchester	1913
Robert Saunders Dowst .....	West Virginia	1914
Nathan Efron .....	Boston	1913
Carl Rudolph Felton .....	Boston	
Frank Hugh Flagg .....	Dorchester	1914
John Joseph Flaherty .....	Lowell	1913
Leslie Nathaniel Gebhard .....	Everett	
Isaac Greenburg .....	Everett	1913
John Edward Hand .....	Cambridge	1913
Ralph Rodney Harris .....	Leominster	1915
Reuben Harris .....	Dorchester	
William Martin Hielgmann .....	Roxbury	
Thomas Francis Edward Higgins .....	Newton	1914
Roy Howard Hoffman .....	North Reading	1914
Frank Radford Hope .....	Melrose	1915
John Jeremiah Humphrey .....	Dorchester	1915
Harry Eugene Jenkins .....	Boston	
Harold Pratt Litchfield .....	Cohasset	1913
William MacConnell .....	Dorchester	
Richard Henry MacDonald .....	Randolph	
Harry Benjamin Mendelsohn .....	Dorchester	1913
Michael Joseph Miles .....	East Boston	
Robert Benjamin Mount .....	Dorchester	1913
John Sidney Patton, Jr. ....	Boston	1913
Peter William Pezzetti .....	Boston	1913
Arthur Carter Pickering .....	Salem	1914
Maurice James Power .....	Charlestown	1915
Carl Fisher Prescott .....	Quincy	
Frank Xavier Reilly .....	Westboro	1915
John William Robbins .....	Somerville	1913
Harry L. Saipe .....	Chelsea	
Philip Samuels .....	Malden	1913
Walter Simonds .....	Milton	1914
George William Skuse .....	Boston	
Charles Harrison Sloan .....	Waverly	1913
Max Smith .....	Boston	1914
Milton Anthony Stone .....	Boston	1913
William Allen Stone .....	Dorchester	1914
Lucius Byron Weymouth .....	Hyde Park	1914

\*Deceased.



CLASS OF 1914

# Other Departments

## Recreation and Health

ALBERT E. GARLAND, M.D., B.P.E., Director

*The physical work* is under the best supervision, and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative Hygienic and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts, Basket Ball, Baseball and Athletics.

## Religious Work

NON-SECTARIAN

EDWIN W. PEIRCE, Secretary

In order that a young man may secure a well-balanced development and attain the true foundation for successful life work, the Association advises each member in planning his schedule to enter into one or more of the following activities:

Bible Study, Training for Christian Service, Sunday Meetings of Men, Personal Service Groups and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter).

## Social Work

DAVID M. CLAGHORN, Secretary

The attention of members is called to the many opportunities in the Association for social service, and the following social features:

Newly Equipped Game Rooms	The Popular Novel Club
The Association Congress	The Land and Water Club
Camera Club	Glee Club

Recreation Headquarters at Riverside

Popular Social Evenings and Entertainments

## Department of Employment

FREDERICK W. ROBINSON, Secretary

*The Employment Department* is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

## Boys' Department

JAMES G. BARNES, A.B., City Secretary

The physical, social, employment and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Members of the school may use the boys' Game and Social Rooms and take part in special activities, such as Entertainments, Minstrel Shows, Debates, Bible Classes, Clubs, etc.





# School of Commerce & Finance



AN INCORPORATED INSTITUTION OF COLLEGE GRADE  
WITH PRIVILEGE OF GRANTING DEGREES

CATALOGUE  
1915-1916

**Boston Young Men's Christian Association**  
316 HUNTINGTON AVENUE, BOSTON, MASS.

DOWNTOWN OFFICE OPEN FROM JULY 15 TO OCTOBER 1  
TREMONT BUILDING, 73 TREMONT STREET

**DEPARTMENT OF EDUCATION**  
of the  
**BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION**  
**SCHOOL OF COMMERCE AND FINANCE**

**Evening Sessions Only**

Established in 1907; incorporated in 1911. Offers the following four-year courses leading to the degree of B.C.S. (Bachelor of Commercial Science): Business Administration, Finance and Bond Salesmanship, and Professional Accountancy. Any one passing the examination for advanced standing, is enabled to complete any one of the three regular courses and secure the degree in three years. Special courses in addition to regular courses.

**SCHOOL OF LAW**  
**Evening Sessions Only**

Established in 1898; incorporated in 1904. Provides a four-years' course in preparation for the Bar and grants the Degree of Bachelor of Laws.

**SCHOOL OF CO-OPERATIVE ENGINEERING**  
**Day Sessions**

Four-year courses of college grade in Chemical, Mechanical, Civil and Electrical Engineering, in co-operation with business firms. Students earn while learning. Open to High School graduates.

**HUNTINGTON SCHOOL**  
**Day Sessions**

A high-grade school, consisting of a Preparatory Department of seven classes fitting for Colleges, Technical and Professional Schools, a Technical Department, fitting for positions along engineering lines, and a Business Department preparing students for business pursuits.

**PREPARATORY SCHOOL**  
**Evening Sessions**

A school of high school grade preparing students for Colleges, Scientific Schools, West Point, Annapolis, Lowell School for Industrial Foremen, and our professional schools.

**SCHOOL OF BUSINESS**  
**Evening Sessions**

Offers all of the courses of the regular Business School program, and additional cultural courses, preparing for business and admission to our School of Commerce and Finance.

**POLYTECHNIC SCHOOL**  
(College Grade)  
**Evening Sessions**

A school offering three and four-year courses in Chemistry, Chemical, Electrical, Structural, Railroad and Municipal Engineering.

**SCHOOL OF AUTOMOBILE ENGINEERING**  
**Day and Evening Sessions**

Deals with the construction, care, repair and operation of all types of gasoline vehicles; a large staff of teachers; ample equipment and garage.

For further information concerning any of the above schools or departments, address the Director of Education,

**FRANK PALMER SPEARE, M.H.**

316 Huntington Avenue, Boston, Mass.  
Telephone, Back Bay 4400.

ANNOUNCEMENT  
OF THE  
**School of  
Commerce & Finance**  
1915-1916



Department of Education  
OF THE  
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION



# Calendar

## 1915

Sept. 14 and 16 (7.30 P.M.)	Entrance Examinations for Advanced Standing (316 Huntington Ave.)
Sept. 13 to 17 inclusive (11 A.M. to 9.30 P.M.)	Week of Enrollment (316 Huntington Ave., or Tremont Bldg., 73 Tremont St., Boston)
Sept. 13 to 17 (7.00 P.M.)	Examinations for Removal of Conditions (316 Huntington Ave.)
Sept. 20 (7.00 P.M.)	Opening Exercises of the School of Commerce and Finance, and the Evening Law School
Oct. 12	Columbus Day
Nov. 25	Thanksgiving Day
Dec. 23 (9.30 P.M.)	Christmas Vacation Begins

## 1916

Jan. 6 (7.00 P.M.)	Christmas Vacation Ends
Feb. 4	Close of First Semester
Feb. 7	Beginning of Second Semester
Feb. 22	Washington's Birthday
April 19	Patriots' Day
May 30	Memorial Day
June 5-9	Final Examinations

## OPENING EXERCISES

The opening of the first semester will be on Monday, September 20th, at 7.00 P.M., in Bates Hall. At this time plans for the coming school year will be discussed and the various classes organized. There will also be addresses by prominent business men. This meeting will be open to the general public and those who contemplate enrolling in the School or whose plans are not yet determined are cordially invited to attend.

## OFFICE HOURS

A downtown office will be located in the Tremont Building (73 Tremont Street) from July 15 to October 1. This office will be open each week day from 10.00 A.M. to 6.00 P.M., excepting Saturdays, on which day it will be closed at 2.00 P.M. It will be open each Tuesday and Thursday evening from 7.00 to 9.30.

The Educational office at 316 Huntington Avenue will be open each week day from 9.00 A.M. to 9.00 P.M.

Telephone Connections—316 Huntington Avenue, Back Bay 4400. (Ask for the School of Commerce and Finance.) Tremont Building, Haymarket 3148.



# Organization

## General Administrative Officers of the Boston Young Men's Christian Association

ARTHUR S. JOHNSON, *President*      LEWIS A. CROSSETT, *Treasurer*  
GEORGE W. MEHAFFEY, *General Secretary*

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## *SCHOOL OF COMMERCE AND FINANCE*

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**S. LELAND MONTAGUE**

*Director of the Course*

# **Introduction**

## **THE MODERN INTERPRETATION OF BUSINESS**

Business is no longer regarded simply as a competition or game in which one man or concern seeks to excel another, but rather as a profession demanding that the man who would rise and remain at the head, should constantly outgrow himself in skill and efficiency, and that the corporation or business concern which is to endure be handled in a scientific manner; its past recorded, its present constantly checked up, and its future plotted years in advance. This new interpretation of business has called into being Schools of Commerce and Finance dealing with the technique of scientific business administration and accounting, and such schools are making an important contribution to the stability and advancement of commerce and industry.

## **THE BUSINESS ENGINEER OR ACCOUNTANT**

This conception has also created a new professional man, the business engineer or accountant, who possesses the ability to scientifically study a business, learn its true condition, review its past failures and successes, chart its future and plan and carry out its reorganization and development.

## **SCHOOLS OF COMMERCE AND FINANCE**

Schools for the training of such men are extremely difficult to organize and conduct. The teaching must be authoritative; practical, direct and comprehensible to experienced business men. The difficulties of assembling a faculty and administering the affairs of such a school are far beyond the capacity of the ordinary organization or individual and can only be accomplished by those of broad business and educational experience, and under the auspices of an institution in touch with commerce and industry and familiar with the needs of business men. There are several strong Schools of Commerce and Finance in

## *SCHOOL OF COMMERCE AND FINANCE*

America, but none has had a more rapid rise to pre-eminence or has created more favorable comment than that of the Boston Young Men's Christian Association. Admirably housed in the magnificent plant of the Association, liberally provided with working equipment, scientifically managed, and properly taught, its development and efficiency are an acknowledged achievement.

### **NOT AN EXPERIMENT**

Those who have been familiar with the School System of the Boston Young Men's Christian Association during the past eighteen years are not surprised at the remarkable success of the School of Commerce and Finance. The Association operates seven great schools, four of college grade, which have won a national reputation for efficiency and are recognized as leaders in their respective fields.

The great success of the Association School System has been due largely to the fact that it is not a side issue or an institution devoted to other types of education, but part of a great system planned and operated to meet the highest needs of employed men of all classes, in which work the Boston Association stands pre-eminent.

### **MODERN PERIOD**

The School of Commerce and Finance has been in existence for a number of years, but its modern period of development dates from its incorporation in 1911 when the degree granting privilege was obtained and the School put on a college basis.

### **SKILLED LEADERSHIP**

We have been particularly fortunate in our leadership and teaching during these latter years and the faculty has constantly improved. We are able to announce for the coming year the best balanced and strongest corps of instructors which we have ever been able to assemble and the School will enter upon the new year thoroughly qualified to maintain its standards.



## INTRODUCTION

### METHODS ADOPTED

All educators appreciate that wherever possible theory and practice should go hand in hand. In many Schools of Commerce the instruction is largely given through lectures with comparatively little practice. The method of the Association School is just the reverse. A great deal of practice is given combined with lectures and demonstrations. This is the only school in America which has maintained this system throughout and the results have amply justified the time and expense involved. All of our teachers are thoroughly familiar with this method and several are the product of our School so that entering students as well as upper class men may be sure that the traditions and methods of the past will be fully maintained.

### REFINEMENT OF DETAIL

A critical survey has been made of the School in all its departments. Every feature which showed any weakness has been strengthened and improved. Several changes have been made in the faculty, men have been promoted to positions of greater responsibility, and each course given to the most competent man. We have been especially fortunate in securing some exceptionally capable men of broad experience and technical training to handle the strictly professional side of the work in Costs, System Building and similar subjects. A new course in Life Insurance is also announced and the program generally enriched. We approach the season of 1915-16 with the utmost confidence in our ability to provide our students with as complete and thorough instruction as can be obtained in any school of this kind.

## General Statement

The School of Commerce and Finance is a technical institution of college grade. It was incorporated in January, 1911; in March of the same year the Massachusetts Legislature granted it power to confer upon its graduates the degrees of B.C.S. (Bachelor of Commercial Science) and M.C.S. (Master of Commercial Science).

The School was formally opened as an incorporated institution September 25th, 1911, offering its regular courses through evening sessions only. The enrollment of students for the past four years has been as follows:

1911-1912.....	153
1912-1913.....	243
1913-1914.....	664
1914-1915.....	761

The ages of the students range from nineteen to fifty-six years. These men include in their number office managers, technical engineers, lawyers, accountants, commercial teachers, credit-men, salesmen, buyers, bank clerks, private secretaries, bookkeepers and assistant bookkeepers. By reason of their maturity and practical experience they are able to acquire and assimilate much more technical knowledge in a given time than could men of less years or business experience. The quality of a man's daily work is benefited almost from the time he enters the School of Commerce and Finance because of the practical instruction he receives, while the grade of his work at the School is much improved by his constant contact with actual conditions in business during the day. A large number of students receive an increase in income during their first year at the School and further increases follow as a natural sequence to increased ability.

Three regular courses are offered—Business Administration, Professional Accountancy and Finance. These courses are specially planned to prepare men for public accounting, to pass C. P. A. examinations, and to become office managers, bankers, auditors, cost accountants, buyers, salesmen, credit-men, advertising

## GENERAL STATEMENT

managers, etc. In choosing a life career if a man's aspirations do not reach beyond the work of a bookkeeper or office clerk then the preparation offered by business schools and the commercial departments of high schools may suffice. If, however, he aspires to become a specialist in business, the training for which should be as complete as that required for law, engineering or medicine, he should secure his preparation from some institution of college grade where the quality and scope of instruction is equivalent to that provided by schools of law, engineering or medicine.

The School of Commerce and Finance is particularly fortunate in several respects. It is not a money making institution, but part of a great educational system liberally endowed through its buildings and equipment. The members of the faculty are men of liberal education and broad experience, not alone in the teaching of their subjects but in the commercial application of them. Its students are mature men of exceptional ambition and intelligence with whom it is an inspiration to associate. Men of discrimination who are serious in their determination to secure the very best training that is available will appreciate the desirability of identifying themselves with a school which has as its avowed purpose the creation of vocational efficiency, and which adapts its methods and courses of study to the immediate needs of American business men,—enabling them to develop their capacities to the highest degree.

Statistics show that the School of Commerce and Finance is the third largest institution of its kind in the United States. Its enrollment of 761 students is the more remarkable when it is considered that the School was incorporated only four years ago.

It has been claimed that accounting subjects receive far too little attention in many institutions that aim to prepare their students for public or private practice in accountancy. A special effort has been made by the School of Commerce and Finance to meet this criticism, and to offer courses of such length and character as to really accomplish the desired end.

A great amount of preparation is required on the part of the instructor in order to provide efficient instruction in accountancy

## *SCHOOL OF COMMERCE AND FINANCE*

subjects and to furnish suitable material for intensified practice work in bookkeeping technique, auditing, system building and cost accounting. All practice work assigned to and later submitted by students should be carefully examined, graded and promptly returned. It requires a great deal of time to cover the amount of practice work essential to developing an advanced knowledge of accounting subjects, and no institution can expect to obtain satisfactory results in the time ordinarily devoted to them.

A consideration of the number of hours spent in accounting subjects in the School of Commerce and Finance will show that the criticism made concerning such schools in general has been met. The courses offered in this school require far more class room hours devoted to accountancy subjects than is customary in other similar institutions. Also students are required to perform much more practice work than is customary, the minimum number of hours of outside work being over 1200. In other words, in order for a man to graduate from the Professional Accountancy course in the School of Commerce and Finance, it becomes necessary for him to devote about 1800 hours to accounting subjects, two-thirds of which is given up to carefully graded practice work. The same thoroughness which characterizes the work in accounting is emphasized in the subjects dealing with Business Law, Buying, Salesmanship, Sales Managership, Commercial Credits, Publicity, Investments, Real Estate, etc.

During the past few years courses in Accounting, Business Law, Economics, etc., have been exploited by various corporations and individuals purely as money making propositions. Correspondence courses are not to be compared with resident instruction. Too much stress cannot be placed upon the importance of personal contact with the instructors, and the inspiration and helpfulness which comes from associating with a class of ambitious and experienced men.

## Entrance Requirements and Courses

Three courses leading to the degrees of Bachelor of Commercial Science and Master of Commercial Science are offered by the School of Commerce and Finance:

Business Administration  
Professional Accountancy  
Finance

A complete description of each of these courses is given elsewhere in this catalogue.

### *Entrance Requirements*

Any man eighteen years of age or over, of good character, who is a graduate of an approved high school or its equivalent, may register for any of the evening courses offered in the School of Commerce and Finance as a candidate for the degree.

A non-high school graduate may enroll as a conditional candidate for the degree and take any of the regular courses or elect any subjects offered in the regular programmes of the School. (See provision on page 22 covering the minimum graduation requirements.)

The chief function of this School is to be of service to those who merit service. To that end it waives the traditional entrance requirements and opens its doors to any man who is willing to forego social pleasures in order that he may devote all his spare time to study.

The standards set by the School are unusually high in all subjects. It prefers to earn the reputation of being an institution where the entrance requirements are exceptionally liberal but where the standard for graduation is exceptionally high. Any man who can complete a course in the School of Commerce and Finance and meet the minimum graduation requirements for non-high school graduates is thoroughly entitled to the degree. If a man enters and is unable to meet the standards of the course he is advised to repeat the work or transfer to another course better adapted to his ability.

## SCHOOL OF COMMERCE AND FINANCE

### *Period of Attendance*

The school year consists of thirty-six weeks, and commences September 20, 1915.

### *Four-Year Course*

It requires four years of attendance to complete any of the regular courses unless one enters with advanced standing, in which case they may be completed in three years. During the first two years of the four-year course attendance is required on two evenings of each week, and during the remaining two years attendance is required on three evenings of each week. No entrance examination is required from those who enroll for a four-year course because the work in accounting given in the first year does not presuppose a knowledge of double entry bookkeeping.

### *Three-Year Course*

A student may complete any of these courses in three years provided he enters with advanced standing. This calls for attendance three evenings each week throughout the three years. A student who wishes to enter with advanced standing must pass an examination in accounting. This examination presupposes a thorough knowledge of double entry bookkeeping as applied to mercantile businesses, a familiarity with the form and arrangement of balance sheets and profit and loss statements, and the ability to open and close a set of books properly. (Specimen questions taken from past examinations are given below.) Graduates of business schools and commercial departments of high schools where a thorough training in modern bookkeeping methods is provided should be able to pass the examination for advanced standing, especially if they have had practical experience in bookkeeping. Teachers of bookkeeping and experienced bookkeepers should also be able to pass this examination without difficulty.

It is highly essential to make a distinction between those who do not understand bookkeeping and those who have a sufficient knowledge of the subject to take up the study of higher accountancy, for in no other way can justice be done to both groups. The former must be given a thorough training

## ENTRANCE REQUIREMENTS AND COURSES

in the elementary principles before attempting to take up more advanced work, while the latter is prepared to start at a more advanced stage in accounting subjects. The entrance examination affords a proper basis for determining which students are eligible for advanced standing. Therefore, if a man considers that he is capable of completing a regular course in three years he is asked to demonstrate his preparedness by passing an examination.

Those who desire to take the examination for advanced standing are advised to consult with the Assistant Dean and if necessary to devote some time in preparing for the examination. The examination may be taken at the Y. M. C. A. Building, 316 Huntington Avenue, at 7.30 o'clock P.M., on September 14 or 16.

### SPECIMEN QUESTIONS TAKEN FROM EXAMINATIONS FOR ADVANCED STANDING

1. How should one proceed to detect errors in a trial balance?

2. Following are the titles of several ledger accounts common to mercantile and manufacturing bookkeeping. Indicate, by placing an A, L, R or E on the left margin, which ones show by their balances an asset, liability, revenue or expense.

Corporation Taxes	Machinery and Equipment
Office Stationery	Rent Received in Advance
Stable Supplies on Hand	Securities Owned
Taxes Paid in Advance	Good Will
Insurance Premiums Prepaid	Commissions Earned
Notes Payable	Salaries and Wages Accrued
Cash	Office Help

Accrued Interest on Mortgages Payable

3. (a) How often is it possible to compile a profit and loss statement and a balance sheet in a mercantile or manufacturing business, as a general proposition?

(b) How often should ledger accounts be ruled off?

(c) How do you arrange accounts in a general ledger—that is, in what order do you arrange them?



## *SCHOOL OF COMMERCE AND FINANCE*

4. Make up an expense account containing several items, as it would appear in the general ledger. Illustrate how it should be closed at the end of a fiscal year.

5. What are the advantages of controlling accounts? Give an example and tell what is debited and credited to such an account, and explain its relations to its subsidiary records.

6. Of what use are special columns in books of original entry? Explain their advantages.

7. Give a brief rule for determining which accounts are to be debited and credited in recording business transactions.

8. (a) What is represented by the excess of assets over liabilities?

(b) What is represented by the excess of liabilities over assets?

9. Describe fully how one should proceed to reconcile a bank balance.

10. What are the functions of the Journal in a set of books where a Cash Book, Purchase Book and Sales Book are kept?

11. Make out a bank check.

12. Make out a note.

13. If you receive a note from John Smith (one of your customers) to apply on account, how and where would you record this transaction? Illustrate by showing the entry you would make for it.

14. What is the difference between single entry and double entry bookkeeping?

15. Define the following terms: Fixed Assets, Current Assets, Fixed Liabilities, Current Liabilities, Gross Profit, Net Profit from Operations, Net Profit, Surplus, Net Worth.

16. To what accounts would you charge the following items? Freight Inward, Sales Returns, Cash Discounts on Sales, Rent, Insurance Premiums.

17. Outline the rulings of a Cash Book with which you are familiar, explain how cash transactions are recorded therein, and how postings are made to the General Ledger.

18. What are the functions of a Purchase Book, Sales Book and a Journal.



## ENTRANCE REQUIREMENTS AND COURSES

### *General Remarks Bearing Upon Courses*

The purpose of the courses is to provide thorough and adequate training for a business career. Every attempt is made to conduct the courses along strictly practical lines and to furnish the students with a knowledge of modern business customs which they will be able to apply to their every-day lives. It is vitally important for a man who desires to become a successful business man to secure the most authentic instruction that is available.

It is difficult to secure a working knowledge of accounting without a great amount of practice work. Lectures alone will not develop a finished accountant. An elastic knowledge of a technical subject and the ability to apply that knowledge comes only through lectures supplemented by intensified practice. A student who attempts to acquire a knowledge of accounting by lectures alone finds when he has completed his course that he is deficient in technique; a deficiency which he does not realize until he attempts to put his training into practice.

In the School of Commerce and Finance a large amount of practice work is required to be done in connection with all technical subjects. The larger part of this work must be performed outside of the class and takes considerable time.

The completion of a course at this school means a sacrifice of social pleasure and the giving up of much of one's spare time. For those who enroll in any of the four-year courses the average time required for outside work varies from eight to fifteen hours a week.

Special attention is called to the announcement of lecture courses in Buying, Publicity, Life Insurance, Salesmanship, Sales Managership, Commercial Credits, Investments, Corporation Finance and Real Estate, as shown on the last pages of this catalogue.

# Requirements for Graduation

## TERM WORK AND EXAMINATIONS

### *Term Work*

All term work assigned is required to be prepared and submitted by students. It is then examined, graded and returned to them, with corrections clearly noted for their benefit. The marks used in grading term work and examinations are as follows:

A—90% to 100%

B—80% to 90%

C—70% to 80%

D—Below 70%

The minimum passing mark is 70%, and all term work with a grade of "D" is required to be repeated until a passing mark is attained.

The term work in connection with accounting subjects consist of sets of books to be written up; a great variety of exercises in connection with financial statements, adjusting entries and closing entries are assigned; accounting systems and sets of instructions for their conduct are required to be prepared; sets of books are audited and audit reports and working papers are required to be submitted; a great variety of C. P. A. questions in Theory of Accounts, Practical Accounting and Auditing are required to be answered; and problems are given dealing with the accounts of public utilities, municipalities, executors and trustees, manufacturing concerns, etc.

Business law, economics, life insurance, buying, publicity, salesmanship, commercial credits, sales managership, investments and real estate, are taught by means of lectures supplemented by reading assigned for home study.

*No student who is a candidate for the degree will be admitted to either the Junior or Senior Classes unless all term work previously assigned to him has been satisfactorily completed.*

## REQUIREMENTS FOR GRADUATION

### *Examinations*

Midyear examinations are given during the last two weeks of the first term, and final examinations are given during the last two weeks of the school year.

Make-up examinations will be given at 7.00 P.M., during the week of September 13 to 17, inclusive, and during the school year as is necessary.

Examination papers are examined, graded and returned to students as promptly as possible.

At the first meeting of classes following the return of examination papers in economics, law and accounting subjects, the instructors give the correct answers to the questions and discuss any matters relating to them which the students desire to suggest.

If a student is absent from, or fails to pass, an examination he is then required to take a make-up examination. If he fails to pass the make-up examination he is given another opportunity to pass off his condition but only two make-up examinations will be given in each subject. If he fails to pass both these examinations he will be conditioned in that subject and will be required to repeat the work in which he is conditioned unless excused therefrom by a special vote of the Faculty. Conditions may be carried forward but they must be passed off before a student is permitted to graduate.

Examinations are graded the same as term work. The marks used in grading are shown on the preceding page. The minimum passing mark is 70%, and examinations marked "D" incur conditions which are required to be ultimately passed off before one is permitted to graduate.

Non-high school graduates who contemplate receiving the degree should bear in mind that at least 75% of their term work and 50% of their examinations must have grades of "B" or higher.

### *The Honor System*

Since the organization of the School of Commerce and Finance all examinations have been conducted under the Honor System. If there is any class of educational institu-

## SCHOOL OF COMMERCE AND FINANCE

tions where the Honor System should be practiced it is in those institutions where men are trained for business careers. The mere act of enrolling as a student of the School of Commerce and Finance implies a willingness to abide by and contribute to the moral support of this system. Examinations are not proctored and the members of each class jointly and severally assume the responsibility of conducting examinations honorably and orderly.

It should be remembered that there is no objection to students working together on term work when each contributes his share of efforts and ideas. In fact, genuine benefits should accrue from an interchange of ideas where each man does his part of the work.

### *Reports of Standing*

At the close of each year a report of his standing is rendered to each student who has completed the required work. In case a student's work is unsatisfactory he may be required to repeat the subject or subjects in which his work has been unsatisfactory, drop one or more subjects, or withdraw from the course.

## GRADUATION REQUIREMENTS

### *Candidates for the degree of B.C.S.*

The degree of Bachelor of Commercial Science will be conferred upon any man who is a graduate of an approved high school, if he completes all term work and examinations prescribed in any of the courses offered by the School of Commerce and Finance with a grade of "C" or higher.

### *Candidates for the Degree who are not High School Graduates*

A man who is not a high school graduate may enroll for any of the courses offered by the School of Commerce and Finance as a candidate for the degree of Bachelor of Commercial Science. The degree will be conferred upon him provided: First, he completes 75% of the term work prescribed with a grade of "B" or higher and the balance of the term work with a grade of "C"; second, he passes 50% of all examinations pre-

## REQUIREMENTS FOR GRADUATION

scribed in the course for which he is enrolled with a grade of "B" or higher and the remaining 50% with a grade of "C"; third, he has had sufficient business experience to warrant, in the judgment of the faculty, his receiving the degree.

### *Candidates for the Degree of M.C.S.*

Candidates for the degree of Master of Commercial Science must hold the degree of Bachelor of Commercial Science from an approved school of Commerce and Finance. They are required to take a one-year graduate course, subject to the direction of the faculty, and to pass examinations upon the subjects therein pursued. They may also be required to prepare a thesis on a subject to be approved by the faculty.

### *Minimum Requirements for Attendance*

Except in case of illness or other unavoidable causes, eighty per cent of attendance in each subject is prescribed as a minimum requirement for graduation.

### *Honorary Distinction*

Two honorary designations are granted at the time of conferring the degree of Bachelor of Commercial Science:

*With Highest Honor*, to those who complete all term work and examinations throughout their course with at least 90% of A's and no marks below B.

*With Honor*, to those who complete all term work and examinations throughout their course with at least 50% of A's and of the balance 75% of B's.

# General Information

## SPECIAL STUDENTS

Under this heading are classed those who enroll for one or more subjects but who do not wish to pursue a complete course. Special students may later become candidates for a degree, in which case they will be credited with all work satisfactorily completed.

Any one or more subjects offered by the School may be taken by special students. The following lecture courses which are included in the Business Administration course should appeal particularly to men who are actively engaged in business and who desire to obtain the best possible instruction along some particular line:

Buying and Commercial Resources	Real Estate
Publicity	Salesmanship
Sales Managership	Corporation Finance
Commercial Credits	Investments
Money and Banking	Life Insurance

There are few men engaged in business who could not secure some valuable ideas from the lectures dealing with any one of the above subjects. The lecturers are specialists of wide experience, and they give to those who attend their lectures the gist of their practical knowledge which it has taken them years to acquire.

During the school year of 1914-15 there were approximately 200 men who attended the lectures dealing with the foregoing subjects. There is no better way to prepare for advancement than by being ready when the opportunity for advancement occurs. It costs nothing to carry practical knowledge once it is acquired, and it is the most useful, productive kind of knowledge that one engaged in business can possess. A man engaged in selling should have a working knowledge of Publicity and Commercial Credits because each of those departments are so closely related to his work; and he should understand the organization and administration of a Purchasing Department in that he may

## GENERAL INFORMATION

have a larger appreciation of the opposite side of his vocation. Regardless of the particular department of a business in which a man may be engaged, he is worth far more to himself and to his business if he possesses a broad knowledge of the organization and administration methods of the other departments.

A student may elect to take any one of the accounting subjects, or he may take Law and Accounting only, omitting the courses in Economics. The completion of a special programme consisting of Law and Accounting subjects should prepare one to pass the C. P. A. examinations. In fact, the course in Professional Accountancy is designed to provide a man with a much more complete preparation in accountancy than is contemplated by the C. P. A. examinations in any state.

Descriptions of the above courses will be found on the last pages of this catalogue under the heading, "Description of Subjects."

### EXCELLENT OPPORTUNITIES FOR COLLEGE GRADUATES AND COMMERCIAL TEACHERS

#### *College Graduates*

The excellent opportunities offered in the comparatively new field of professional accountancy, the demand for specially trained men for business administrative positions, and the opportunities in financial institutions open to properly qualified men, should be of interest to college graduates who contemplate business careers. The School of Commerce and Finance offers to such men an opportunity to acquire through its evening courses such practical knowledge as will be of greatest service to them.

#### *Commercial Teachers*

There is a demand for teachers of accounting, economics, business law, etc., and the work is both pleasant and remunerative. High schools throughout the country are adding commercial subjects to their programmes; many of them are offering elaborate four-year commercial courses; and commercial high schools are not uncommon in our larger cities. The field

## *SCHOOL OF COMMERCE AND FINANCE*

of commercial teaching offers most attractive opportunities to those who are properly prepared.

It is very desirable for commercial teachers to possess a more advanced knowledge of the subjects which they teach than they expect their students to acquire. A competent commercial teacher should have more than a text book knowledge of his subject. He should endeavor to acquire a practical knowledge of modern bookkeeping practice, the science of classification, principles of economics, business law, corporation finance and business methods and organization. Experience has shown that commercial teachers grasp the subject of higher accounting very readily. This may be accounted for by the fact that their teaching experience promotes habits of care and precision and a conscientious regard for details. Some of the most essential characteristics of a successful accountant are highly developed in the commercial teacher. The courses offered by this School afford a splendid preparation for those who desire to prepare for teaching commercial subjects.

### **CREDIT FOR COURSES COMPLETED IN OTHER INSTITUTIONS OF COLLEGE GRADE**

Students who have completed courses in other institutions of college grade will be given credit upon presenting evidence that such courses were satisfactorily completed and that they are equivalent to the corresponding courses offered by the School of Commerce and Finance.

### **TUITION FEES**

All tuition fees include membership in the Boston Young Men's Christian Association. If a special student enrolls for more than one subject the Y. M. C. A. membership fee of \$2 will be deducted from each tuition fee paid in excess of the first one; *e. g.*, should one enroll for the Publicity and Salesmanship courses the tuition would be \$15 and \$13, respectively.

All tuition fees are payable as follows:

One-third on or before September 20.

One-third on December 1st.

Balance on February 1st.



## GENERAL INFORMATION

### *Schedule of Tuition Fees*

Any of the four-year courses:

1st year	.	.	.	.	.	.	\$60.00
2nd year	.	.	.	.	.	.	60.00
3rd year	.	.	.	.	.	.	75.00
4th year	.	.	.	.	.	.	75.00

Any of the three-year courses, which are open only to men who pass the examination for advanced standing:

1st year	.	.	.	.	.	.	\$75.00
2nd year	.	.	.	.	.	.	75.00
3rd year	.	.	.	.	.	.	75.00

Business Law, Economics, Money and Banking, Corporation Finance, Investments and Business Organization and Management, English and Spanish are termed half-evening courses, and the tuition fee for any one is \$15 for a full year course or \$7.50 for a half year course.

All other subjects are termed full-evening courses, and the tuition is \$30 for a full year course or \$15 for a half year course.

## REGISTRATION

A matriculation fee of \$5 is charged at the time of registration, which amount will be deducted from the first payment at the time it is made. This registration fee is not returnable in case a student withdraws from the school. An application for registration will be found in the back of this catalogue. This should be made out in detail by those who desire to register for any of the regular courses. If one desires to register as a special student it is not necessary to make out one of these applications. The application for registration should be presented at either the downtown office, 73 Tremont Street, or at the regular office of the School, 316 Huntington Avenue.

It is very desirable that those who contemplate enrolling in the School should register before the opening date. It is of great assistance in making plans and in ordering stationery to know as early as possible the number of students for which to provide. Entering classes are limited as to number and those who register first will be given preference in case all who wish to enroll cannot be accommodated.

## SCHOOL OF COMMERCE AND FINANCE

### EXPENSES FOR BOOKS, STATIONERY AND LECTURE NOTES

#### *Books and Stationery*

The expense for books and stationery varies according to the course or group of subjects selected. It amounts to approximately \$15 per year for any of the regular courses. For any one of the lecture courses it averages about \$3.

#### *Lecture Notes*

Verbatim copies of all lectures except those in accounting subjects are prepared by a reporter. Typewritten copies of each lecture may be purchased by students at uniform prices:

8 pages or under (single space) 20c.

9 to 11 pages inclusive (single space) 25c.

12 pages or over (single space) 30c.

While these verbatim notes have been found to be of great assistance to the students, the purchase of them is entirely optional. The notes, which frequently contain reports of informal discussions, are prepared exclusively for the use of the students in the School; under no circumstances are they to be passed on to the general public, and they are sold with this understanding.

### SOCIAL OPPORTUNITIES

The successful completion of any of the courses offered by this School requires close application and persistent effort. In order to relieve the strain of study as much as possible the student body of the School holds periodical "get-together" meetings which afford opportunity for the students to form acquaintances among the members of their own and other classes. These social meetings are informal in character and form an attractive part of the school life. Outings, with baseball and athletic games, are held frequently by the various classes and by the student body as a whole.

The splendid equipment of the new Y. M. C. A. building, including its gymnasium, both indoor and outdoor, swimming pool, bowling alleys, tennis courts, etc., are at the disposal of

## GENERAL INFORMATION

students at reasonable rates. In fact, every effort is made to give relief to the tax on one's mental powers which the nature of the course makes necessary and to develop the students physically and socially as well as mentally.

## EMPLOYMENT FOR STUDENTS

The School has been very successful in the past in assisting its students to obtain desirable positions and will render every assistance possible to those residing at a distance who desire to locate in Boston in order to attend the school.

Students are urged to refer to the office of the School all vacancies which come to their attention. In this way students can be of great service to one another. In the student body of the School of Commerce and Finance there is evidenced a very marked degree of willingness to co-operate in this respect in every way possible.

## BOARD AND ROOM

There are 267 attractive rooms in the dormitories of the Association Building, the weekly rate ranging from two to four dollars. The demand for these rooms is so great that it is very difficult to secure one except by filing an application well in advance. Such applications should be filed with W. M. Danner, Office Secretary, 316 Huntington Avenue.

The School office will render assistance to those who desire rooms in private families, with or without board. Excellent meals are served in the Association Restaurant at reasonable rates.

## Description of Courses

Three regular courses of instruction are offered by the School of Commerce and Finance.

Business Administration

Professional Accountancy

Finance

These courses are arranged with a view to affording students the most complete preparation possible for their chosen careers.

Candidates for the degree who are allowed credit for subjects satisfactorily completed at other institutions may substitute other subjects in place of those for which they are given credit. Special students are permitted to elect any subject or group of subjects, provided their programmes do not conflict with the regular programmes of the School. Students are permitted to transfer from one course to another at the close of the second year, as the first two years of all courses parallel one another.

### BUSINESS ADMINISTRATION COURSE

The purpose of this course is to provide men who contemplate successful business careers with a broad, practical and modern preparation for their chosen work; and to enable men who are engaged in business to increase their ability and to become thoroughly capable specialists.

There is a great demand in business for men who are capable of developing into specialists—such as office managers, cost accountants, financial men, credit men, salesmen, sales managers, publicity managers, buyers, etc. This course gives a man the proper foundation upon which to build a successful career in that particular branch of business administration for which his business experience and aptitude indicate that he is best fitted. It is not designed to develop a specialist in any one particular line, but rather to give the student an all-around training which will readily enable him to “fit in” to a position, adjust himself to its peculiar needs, and overcome obstacles

## DESCRIPTION OF COURSES

that would be difficult, and perhaps insurmountable, to those with insufficient training.

The programme of the Business Administration course runs parallel to those of the other courses during the first two years. Thereafter, those who elect this course will take in the first half of the third year Commercial Credits on Monday, Money and Banking and Business Law on Wednesday, and Publicity on Thursday; and in the last half of the third year Buying and Commercial Resources on Monday, Corporation Finance and Business Law on Wednesday, and Salesmanship on Friday. In the first term of the fourth year the students in this course will take Insurance on Tuesday, Investments and Business Law on Wednesday, and Real Estate on Friday; and in the second term Sales Managership on Tuesday, Business Organization and Business Law on Wednesday, and continue with the Real Estate on Friday; or students may, at their option, omit the second half of the course in Real Estate and substitute in place thereof a thesis on an administrative subject approved by the faculty.

For programme of this course see Hour Plan pages 35 and 36.

## PROFESSIONAL ACCOUNTANCY COURSE

Twenty years ago the profession of accountancy was practically unknown in America, save amongst the comparatively few business men who engaged auditors or so-called "expert accountants" to check up their books, detect errors in their trial balances, close their books, etc. The total number of men who devoted their entire time to public accounting in this country prior to the year 1890 cannot be definitely stated, but it probably did not exceed 100. At the present time there are about 5000 men who are engaged in professional accountancy work in the United States. The membership of the American Association of Public Accountants numbers over 1200 practically all of whom are Certified Public Accountants.

The duties of the professional accountant of today are varied and complex. He is called upon to make periodical examinations of the books and accounts of all classes of business

## *SCHOOL OF COMMERCE AND FINANCE*

and to report the results of his examination, so that those interested may ascertain from his report the true condition of affairs and the results from operations. He is called upon to make special investigations in behalf of interested capitalists, prospective investors, creditors, bankers, etc. In the case of consolidations he is called upon to examine into the affairs of each company which is a party to the proposed amalgamation in order to provide a proper basis for determining the value to be placed upon each business, its average earning capacity during a given number of years, etc. He is called upon to design and install accounting systems which will reduce to a minimum the possibilities of irregularities, and which will enable the management to ascertain what they want to know when they want to know it. The functions of the professional accountant in this age of complex business activities is becoming more and more varied. The requirements are very broad and exacting, calling for a high degree of technical skill, a familiarity with every phase of business organization and administration, a knowledge of business law, special training in matters of corporation finance, money and banking, and finally the qualities of honesty, moral courage, breadth of vision and insight.

Although the accountancy profession offers attractive inducements to ambitious men who are properly prepared to take up this kind of work, the opportunities in this profession are no more numerous or alluring than the opportunities in private practice for men prepared to fulfill the duties of cost accountants, auditors, office managers, chief accountants, etc. There is a rapidly increasing demand for men who are prepared for this kind of work and the opportunities offered thereby are just as attractive as the opportunities offered in public accounting. In fact, the majority of men who join the accountancy profession do not remain in it. They are constantly advertising their ability with the result that a demand is created for their services through the willingness of business enterprises to pay them a larger salary than they are able to secure in public accounting. There are splendid opportunities in accounting work but they are by no means restricted to the profession of public accounting.

## DESCRIPTION OF COURSES

This course prepares men for the accountancy profession by providing broad practical training in those subjects that are essential to the proper preparation of a professional accountant. It fits students to pass the C. P. A. examinations, but that is a secondary feature. It is distinctly a professional course, having for its chief aim the best possible preparation for the accountancy profession.

For programmes of this course see pages 37 and 38.

### COURSE IN FINANCE

The course in Finance consists of a four-year programme of study covering Accounting, Law, Economics, Banking, Corporation Finance, and the business of dealing with Investment Securities. It is offered for those men who seek to prepare themselves to engage in financial work, either as employees of bond houses and banking institutions or as trustees for private or public funds. A great deal of attention is directed toward the accounting aspects of the subject so that a graduate of the course will have had a thorough training along the lines of corporation and investment accounting and the interpretation of financial statements.

The programme of the course in Finance parallels those of the other courses during the first two years. Thereafter, those who elect this course will take in the first half of the third year Commercial Credits on Monday, Money and Banking and Business Law on Wednesday, and Advanced Accounting Problems on Friday; and in the last half of the third year Sales Managership on Tuesday, Corporation Finance and Business Law on Wednesday, and Advanced Accounting Problems on Friday. In the first term of the fourth year the students in this course will take Advanced Financial Problems on Tuesday, Investments and Business Law on Wednesday, and either Publicity on Thursday or Insurance on Friday; and in the second term Bond Buying on Tuesday, Business Organization and Management and Business Law on Wednesday, and Bond Selling on Friday.

For programmes of this course see pages 39 and 40.



## *SCHOOL OF COMMERCE AND FINANCE*

### **SPECIAL COURSES IN BUSINESS ENGLISH AND COMMERCIAL SPANISH**

During the year 1915-16 the School of Commerce and Finance will offer for the first time courses in Business English and Commercial Spanish.

#### *Business English*

It is felt that a ready command of the English language, including the ability to write a clear, concise and well expressed business letter is extremely essential to the modern business man. The importance of a knowledge of Business English is almost universally recognized, but many men do not realize their weakness in this particular. This course, which is designed to be conducted along strictly practical lines, is intended to meet the needs of those who are deficient in this respect.

This course is open to regular students of the School of Commerce and Finance as an elective. It is recommended that those who desire to take the course do so during their first year in order that the benefit derived from the course may be put to practical use during succeeding years in the School. It will be given on Thursday evenings throughout the School year from 7.00 to 7.45.

#### *Commercial Spanish*

This course is given in two parts, an elementary course, which meets throughout the School year on Tuesday and Thursday evenings from 7.00 to 7.45, and an advanced course in Commercial Spanish which meets on Tuesday and Thursday evenings throughout the School year from 7.45 to 8.30. This course may be taken by regular students in the School of Commerce and Finance as an elective and the successful completion of the course will count toward the degree.



# DESCRIPTION OF COURSES

## FOUR-YEAR COURSE IN BUSINESS ADMINISTRATION

### Hour Plan

	FIRST TERM			SECOND TERM		
FIRST YEAR	Mon.	Wed.	Thurs.	Mon.	Wed.	Thurs.
Accounting I.....	7.00-9.30	8.20-9.30		7.00-9.30	8.20-9.30	
Law I.....		7.00-8.10			7.00-8.10	
Business English (elective).....			7.00-7.45			7.00-7.45
SECOND YEAR	Mon.		Wed.	Mon.		Wed.
Accounting II.....	7.00-9.30		7.00-8.10	7.00-9.30		7.00-8.10
Principles of Economics.....			8.20-9.30			8.20-9.30
THIRD YEAR	Mon.	Wed.	Thurs.	Mon.	Wed.	Fri.
Commercial Credits.....	7.00-9.30					
Publicity.....			7.00-9.30			
Law II.....		7.00-8.10			8.20-9.30	
Money and Banking.....		8.20-9.30			7.00-8.10	
Corporation Finance.....				7.00-9.30		
Buying and Commercial Resources.....						7.30-9.30
Salesmanship.....						
FOURTH YEAR	Tues.	Wed.	Fri.	Tues.	Wed.	Fri.
Life Insurance.....	7.00-9.30					
Investments.....		7.00-8.10				
Law III.....		8.20-9.30			8.20-9.30	
Real Estate.....			7.30-9.30			7.30-9.30
Industrial Organization and Business Management.....				7.00-9.30	7.00-8.10	
Sales Management.....						

NOTE. Students taking this course may, at their option, omit the second half of the course in Real Estate during the second term of the Fourth Year, and substitute in place thereof a thesis on a subject approved by the Faculty.

Students taking this course may, subject to the approval of the Faculty, substitute subjects in Professional Accountancy or in Finance for one or more of the above subjects, provided it can be done without conflicting with the programmes of the School.

## THREE-YEAR COURSE IN BUSINESS ADMINISTRATION

Only those who have passed the examination for advanced standing are eligible to this course.

### Hour Plan

	FIRST TERM		SECOND TERM	
FIRST YEAR	Mon.	Wed.	Mon.	Wed.
Accounting IIA .....	7.00-9.30			
Law I .....		7.00-8.10		Thurs. 7.00-9.30
Principles of Economics .....		8.20-9.30		7.00-8.10
Second Year { parallels the work of the Third				8.20-9.30
Third Year { " " " Fourth				

} year of the Four-Year Course; see Hour Plan on preceding page.

# FOUR-YEAR COURSE IN PROFESSIONAL ACCOUNTANCY

## Hour Plan

	FIRST TERM			SECOND TERM		
	Mon.	Wed.	Thurs.	Mon.	Wed.	Thurs.
<b>FIRST YEAR</b>						
Accounting I.....	7.00-9.30	8.20-9.30	7.00-8.10	7.00-9.30	8.20-9.30	7.00-8.10
Law I .....						
Business English (elective).....			7.00-7.45			7.00-7.45
<b>SECOND YEAR</b>						
Accounting II.....	Mon.		Wed.	Mon.		Wed.
Principles of Economics .....	7.00-9.30		7.00-8.10 8.20-9.30	7.00-9.30		7.00-8.10 8.20-9.30
<b>THIRD YEAR</b>						
System Building.....	Tues.	Wed.	Fri.	Tues.	Wed.	Fri.
Cost Accounting .....	7.00-9.30		8.20-9.30			7.00-9.30
Mathematics of Accounting .....			7.00-8.10			
Law II .....		7.00-8.10			8.20-9.30	
Money and Banking .....		8.20-9.30			7.00-8.10	
Corporation Finance .....						
<b>FOURTH YEAR</b>						
Advanced Auditing.....	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
Advanced Accounting Problems .....	7.00-9.30			7.00-9.30*		7.00-9.30†
Investments .....		7.00-8.10	7.00-9.30		8.20-9.30	
Law III .....		8.20-9.30			7.00-8.10	
Industrial Organization and Business Management.....						
Public Service Corporation Accounting .....						
Special Lectures .....				7.00-9.30‡		7.00-9.30‡

\*Until April 3. †Until April 7. ‡From April 14. #From April 10.

NOTE. Beginning with the school year 1916-17, a course in Elementary Auditing will be given during the second term of the Third Year, on Fridays, from 7.00 to 8.10. Heretofore this course has been given during the second year. It is felt that by putting this course forward to the third year a more thorough training can be given in the fundamental principles of Accounting Technique, a complete knowledge of which is a pre-requisite to a course in Auditing. Because of this change in the schedule the course in Elementary Auditing will not be offered during the School Year of 1915-16.

THREE-YEAR COURSE IN PROFESSIONAL ACCOUNTANCY

Only those who have passed the examination for advanced standing are eligible to this course.

Hour Plan

	FIRST TERM				SECOND TERM			
FIRST YEAR	Mon.	Wed.	Thurs.	Mon.	Wed.	Thurs.		
Accounting IIA .....	7.00-9.30		7.00-9.30	7.00-9.30		7.00-9.30		
Law I .....		7.00-8.10			7.00-8.10			
Principles of Economics .....		8.20-9.30			8.20-9.30			
Second Year { parallels the work of the Third								
Third Year { " " Fourth								

NOTE. Students taking the Professional Accountancy course may, subject to the approval of the Faculty, substitute subjects in Business Administration or in Finance for one or more of the Accountancy subjects, provided it can be done without conflicting with the programmes of the School.

# DESCRIPTION OF COURSES

## FOUR-YEAR COURSE IN FINANCE

### Hour Plan

	FIRST TERM			SECOND TERM		
FIRST YEAR	Mon.	Wed.	Thurs.	Mon.	Wed.	Thurs.
Accounting I.....	7.00-9.30	8.20-9.30		7.00-9.30	8.20-9.30	
Law I.....		7.00-8.10			7.00-8.10	
Business English (elective).....			7.00-7.45			7.00-7.45
SECOND YEAR	Mon.		Wed.	Mon.		Wed.
Accounting II.....	7.00-9.30		7.00-8.10	7.00-9.30		7.00-8.10
Principles of Economics.....			8.20-9.30			8.20-9.30
THIRD YEAR	Mon.	Wed.	Fri.	Tues.	Wed.	Fri.
Commercial Credits.....	7.00-9.30					
Law II.....		7.00-8.10			8.20-9.30	
Money and Banking.....		8.20-9.30				
Corporation Finance.....					7.00-8.10	
Advanced Accounting Problems.....			7.00-9.30			7.00-9.30*
Public Service Corporation Accounting.....						7.00-9.30†
Sales Management.....				7.00-9.30		
FOURTH YEAR	Tues.	Wed.	Thurs. or Fri.	Tues.	Wed.	Fri.
Advanced Financial Problems.....	7.00-9.30					
Investments.....		7.00-8.10				
Law III.....		8.20-9.30			8.20-9.30	
Elective.....			7.00-9.30			
Bond Buying.....				7.00-9.30		
Bond Selling.....						7.00-9.30
Industrial Organization and Business Management.....					7.00-8.10	

\*Until April 7. †From April 14.

NOTE. The courses in Advanced Financial Problems, Bond Buying and Bond Selling will not be offered during the school year 1915-16, but will be given during the year 1916-17. Students taking this course may, subject to the approval of the Faculty, substitute subjects in Professional Accountancy or in Business Administration for one or more of the above subjects provided it can be done without conflicting with the programmes of the School.

THREE-YEAR COURSE IN FINANCE

Only those who have passed the examination for advanced standing are eligible to this course.

Hour Plan				
FIRST YEAR	FIRST TERM		SECOND TERM	
	Mon.	Wed.	Thurs.	Thurs.
Accounting IIA .....	7.00-9.30		7.00-9.30	7.00-9.30
Law I.....		7.00-8.10		7.00-8.10
Principles of Economics .....		8.20-9.30		8.20-9.30
Second Year { parallels the work of the Third				
Third Year { " " " Fourth				

} year of the Four-Year Course; see Hour Plan on preceding page.

{ year of the Four-Year Course; see Hour Plan on preceding page.

## DESCRIPTION OF COURSES

### DESCRIPTION OF SUBJECTS

#### Accounting Department

##### Accounting I

This subject is required throughout the Freshman year of all of the four-year courses. It is designed to cover the fundamental principles of accounting theory and practice. Students are given practice work illustrating the simplest methods of double entry bookkeeping. Carefully prepared sets which illustrate accounting principles in conformity with modern practice are required to be worked up. Frequent lectures are given bearing upon principles, classification of accounts, bookkeeping technique and the form and arrangement of financial statements. A feature of the course is the large amount of practice in the preparation of financial statements, adjustments and closing entries. The students are also required to work up exercises illustrating accounting methods incidental to the bringing in of new partners, changing from a partnership to a corporation, changing a set of books from a single entry to a double entry basis, and the liquidation of partnership concerns. Upon the completion of this subject students will have acquired a practical knowledge of both single and double entry bookkeeping.

Monday evening from 7.00 to 9.30, and Wednesday evening from 8.20 to 9.30. (Mr. Thompson, Mr. Laird and Mr. O'Malley.)

##### Accounting II

This course is a logical continuation of Accounting I and is required throughout the Sophomore year of all of the four-year courses. The work of the course is best divided into two parts as follows:

###### (a) *Theory and Practice of Advanced Bookkeeping*

This consists of practice sets and exercises supplemented by lectures illustrating the principles of advanced bookkeeping as applied to mercantile and manufacturing businesses. The books and accounts peculiar to corporations and to manufacturing concerns are studied in detail. Lectures and exercises are also given bearing upon the accounting features peculiar to various other lines of business. The accounts of institutions, such as libraries, colleges, clubs, hospitals, banks, etc., are studied, and some attention is given to the accounts of private individuals and professional men. A study is made of the Federal Income Tax Law as it relates to individuals and to corporations, and practice is given in making out the forms required to be filed.

###### (b) *Financial Statements and Practical Problems*

One evening each week is devoted to lectures and practice work dealing with the form and arrangement of financial statements applicable to different businesses and to institutions, and to the solution of accounting problems of all kinds. On a large number of evenings allotted to this work the students work out an assigned problem within a given time. This practice on problems which they have had no opportunity to study in advance develops in the student confidence and self-reliance and the ability to think quickly and accurately, and at the same time to present the solution in a neat and finished form.

Careful attention is given to the examination of all exercises and problems passed in; all work is carefully examined, corrections noted, graded and returned. These marks in the aggregate express the grade of class work done by the students.

Monday evening from 7.00 to 9.30, and Wednesday evening from 7.00 to 8.10. (Mr. Rittenhouse.)

##### Accounting IIA

Required in all courses throughout the first year for those who are admitted with advanced standing. Thorough training is given in the science of classification and in bookkeeping technique. Students are required to write up a carefully prepared set of books illustrating the accounting methods of manu-

## SCHOOL OF COMMERCE AND FINANCE

facturing concerns and corporations. Practice work is given in making adjusting entries, closing entries, balance sheets and profit and loss statements. Lectures are given bearing upon the theory of accounts and bookkeeping practice and procedure. Exercises supplemented by lectures are given illustrating the accounting methods of libraries, colleges, clubs and other institutions.

This course naturally divides itself into two parts as in Accounting II, namely, Bookkeeping Theory and Practice, and the Form and Arrangement of Financial Statements. The students are frequently required to work up exercises which they have had no opportunity to study in advance, within a given time. This practice develops the ability to think and work quickly and accurately and at the same time to present solutions neatly and properly worked up.

Monday and Thursday evenings from 7.00 to 9.30. (Mr. Clapp.)

### Accounting III (*System Building*)

Required throughout the first term of the Junior year of the Professional Accountancy course. The purpose of this course is to teach the fundamental principles of System Building as applied to all classes of business. The development of the subject proceeds by lectures, home study and practice work, and the demonstration of systems now in practical operation in various branches of business. The data for all systems is taken from current commercial practice, and by means of the lectures a judicious combination of theory and practice is effected. The preliminary work includes a discussion of loose-leaf and bound record books, of the various styles and types of binders and bindings, of card systems, etc., illustrating their good and bad features. This is followed by lectures on the different kinds, weights, grades and prices of commercial papers. The students are then required to rule up a system for a trading concern from prepared specifications. Then follows a thorough discussion and demonstration of this and several other complete accounting systems which are in actual use and which have been carefully selected so as to include as far as possible all of the various forms used by trading concerns. The forms used in these systems are supplied to the students at actual cost. Lectures on the methods of writing up a set of instructions are given to the class, following which the students are required to write up a model set of instructions for one of the systems previously demonstrated. Toward the end of the course the student is required to design two accounting systems from data supplied by the instructors.

Tuesday evening from 7.00 to 9.30 and Friday evening from 8.20 to 9.30. (Mr. Marvin, Mr. Ball and Mr. Clapp.)

### Accounting IV (*Cost Accounting*)

Required throughout the second term of the Junior year of the Professional Accountancy course.

This subject, which logically follows that of System Building, seeks to familiarize the student with the chief principles relating to the design of accounting systems for manufacturing concerns, special attention being paid to the finding of production costs. The various systems used for instruction purposes are drawn from current practice and the best text books available are used to supplement the work. The work of the course includes a careful study of the various methods of distributing "overhead" expenses, with special emphasis upon the "production factor" method. The study of the several systems used for instruction purposes exemplifies to the student the fundamental "production order" and "process" methods of costing. During the term the student is also required to work up a complete cost accounting set illustrative of the best methods of cost finding, and toward the close of the term to design a cost accounting system to meet described conditions. Throughout the course the student's attention is called to the faults of over-systematization as well as to the true purposes of a properly designed cost accounting system.



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A special feature of this course will be the study of the manufacturing processes, factory management, and accounting methods of a manufacturing concern in actual operation. Students will have the privilege of visiting the factory of this concern in order to enable them to investigate and inquire into the methods of finding and recording factory costs which it uses, and into its general system of management and accounting.

Tuesday evening from 7.00 to 9.30, and Friday evening from 7.00 to 9.30. (Mr. Marvin, Mr. Ball and Mr. Clapp.)

### **Accounting V** (*Mathematics of Accounting*)

Required in the first term of the Junior year of the Professional Accountancy course.

The object of this course is to give the student a working knowledge of the more complex mathematical problems involved in accounting. Practice is given in the use of logarithm tables and their application to simple and compound interest, true discount, bank discount, bond premiums and discounts, depreciation reserves, amortization tables, annuities, etc. Lectures are also given on the uses of the slide rule in commercial transactions; methods of exhibiting comparative statistics by means of graphic diagrams; methods of computing power consumption in determining production costs; and other problems which the modern accountant is called upon to solve.

Friday evenings from 7.00 to 8.10. (Mr. Penard.)

### **Accounting VI** (*Elements of Auditing*)

Required during the first term of the Junior year of the Professional Accountancy course. The elementary principles of auditing in theory and practice are taught by means of lectures, assigned reading and illustrations. Excellent practice work is provided by having each student audit a mercantile set of books, in conformity with a detailed programme dictated and explained by the instructor. All working papers are required to be made in proper form, and an audit report covering the examination is prepared in accordance with the form and arrangement illustrated by model audit reports furnished to the students.

The entire time set aside for this subject is devoted to mercantile and manufacturing audits, so that all students taking this course are given thorough training in the principles of auditing as applied to the greatest number of businesses.

Friday evening from 8.20 to 9.30.

Heretofore this subject has been given during the second year. It is felt that by putting this course forward to the third year a more thorough training can be given in the principles of accounting technique, a thorough knowledge of which is a pre-requisite to a course in auditing. Because of this change in the schedule the course in Elementary Auditing will not be offered during the coming school year, but will be offered beginning with the school year 1916-17.

### **Accounting VII** (*Advanced Auditing*)

Required in the Senior year of the Professional Accountancy course. This subject is presented chiefly by means of lectures and quizzes.

The lectures deal with auditing as applied to mercantile and manufacturing enterprises, financial institutions, clubs, public utilities, insurance companies, etc., and with special investigations, the preparation of audit programmes and audit reports.

The quizzes are conducted by assigning a certain number of C. P. A. questions in auditing and then calling for answers to those questions at the next meeting of the class, at which time the instructor discusses the answers submitted. The members of the class are required to submit written answers to a certain number of audit questions each week, which are corrected, graded

## SCHOOL OF COMMERCE AND FINANCE

and returned to them the following week. Additional C. P. A. questions are discussed informally in the class affording excellent preparation for those who intend taking the C. P. A. examinations.

Monday evening from 7.00 to 9.30. (Mr. Willing.)

### Accounting VIII (*Advanced Accounting Problems*)

Required throughout the Senior year of the Professional Accountancy course.

During the first term the course consists of lectures, demonstrations and discussions, and of problems assigned regularly for solution outside of class. The problems are carefully chosen and cover a wide range of topics such as partnership settlements and adjustments, advanced corporation exercises, illustrating the principles underlying consolidations, holding companies, receiverships, insurance adjustments, trustees' and executors' accounts, as well as numerous problems of a miscellaneous character. Many of the problems are selected from recent C. P. A. examinations held in the different states.

Test examinations extending over the entire evening are given from time to time which are similar in their scope and requirements to the examinations in Practical Accounting set by the State Board. This practice further develops the essential qualities of initiative, self-reliance, accuracy, analytical power, and the ability to accomplish a prescribed amount of work in a given time.

During the second term a series of special lectures are given by specialists in various lines of accounting work supplemented by practical exercises and problems illustrating the accounting features involved. Oral quizzes covering accounting theory and practice conducted by experienced accountants are also a part of the second term's work.

Friday evening from 7.00 to 9.30 (until April 7), (Mr. Rittenhouse, Mr. Marvin, Mr. Steele, Mr. Cooley, Mr. Masters, Mr. Holmes, Mr. French, Mr. Curtis.)

### Accounting IX (*Public Service Corporation Accounting*)

Required in the second term of the Senior year of the Professional Accountancy course.

This subject consists of a carefully prepared series of lectures on the accounts of railroads, street railways, gas companies, and electric light and power companies, based on the standard classifications of accounts adopted by the Interstate Commerce Commission and the Public Service Commissions of various states. The first lecture will deal generally with the business methods of public service corporations. The next three lectures will consist of a discussion of the functions of the accounts used by these concerns. Lectures will then follow dealing in detail with the accounting methods of public service corporations, the forms of reports which are required to be submitted to the national and state authorities, etc. In addition, numerous questions dealing with this class of accounts which have been asked in past C. P. A. examinations will be informally discussed.

Friday evening from 7.00 to 9.30. (Mr. Gidney.)

## DEPARTMENT OF ECONOMICS

### Economics I (*Principles of Economics*)

Required throughout the Sophomore year of all of the four-year courses.

This subject consists of a study of the principles underlying modern business and industrial conditions. The work is carried on by means of lectures, text book assignments, and class room discussions. The course, although concerned with the theory or rather the abiding principles of economic science, seeks constantly to bring out the application of these principles to ordinary business transactions of the present time. The lectures of the first half year

## DESCRIPTION OF COURSES

cover the various means of producing wealth and how it becomes distributed throughout the community. The lectures of the second half year discuss special problems which bear upon present day industry, such as money, credit, taxation, co-operation, the tariff and socialism.

Wednesday evening from 8.20 to 9.30. (Dr. Dewing.)

### **Finance I** (*Money and Banking*)

Required in the first term of the Junior year in all of the regular courses.

This course is intended to give the necessary insight into the problems of money and banking requisite for a complete course in commerce and finance. The Federal Reserve Act of December 23, 1913, raised many new questions of importance in our financial circles and presents many new phases to our financial status, which receive treatment in this course. The first part of the course is devoted to money, under which is treated money as a commodity, coinage, legal tender, gold as a metal, gold production, the gold standard, government paper money, silver dollars and panics. The second part of the course is devoted to banking, comprising a treatment of the functions of a bank, a bank statement, the clearing house system, the free bank system, the National Bank System, state banks and trust companies.

Some attention is given to the more important foreign banking systems such as the Bank of England, the Scotch Bank System, the Canadian Bank System, the Bank of France, and the Imperial Bank of Germany. The course closes with a consideration of recent problems in our own financial history such as the Central Bank question and the Federal Reserve System, with a complete analysis of the Aldrich-Vreeland Act and the Federal Reserve Act.

The work is carried on by means of lectures, text book assignments and class room discussions.

Wednesday evening from 8.20 to 9.30. (Mr. Wilson.)

### **Finance II** (*Corporation Finance*)

Required in the second term of the Junior year in all of the regular courses.

This course covers the principles involved in the financial acts of a modern business corporation. The work will be carried on by means of lectures and assigned reading. The course begins with a historical survey of the modern corporation, especially the tendencies which have created it. Then will follow detailed discussions of the problems confronting present day corporations including all the steps of promotion, expansion and reorganization. The course emphasizes the economic and business aspects rather than the legal aspects of corporations.

Wednesday evening from 7.00 to 8.10. (Dr. Dewing.)

### **Finance III** (*Investments*)

Required in the first term of the Senior year in all of the regular courses.

This course deals with securities from the point of view of the private investor and the trustee. Lectures will be given on the nature of investments and the proper distribution of investment risks. The work includes discussions of the advantages and disadvantages of various industries for the investment of capital, the laws governing the taxation of securities, as well as a few of the "pitfalls" of investment. The work will be carried on by means of class room lectures and discussions and assigned reading.

Wednesday evening from 7.00 to 8.10. (Dr. Dewing.)

### **Finance IV** (*Advanced Financial Problems*)

Required in the first term of the Senior year in the course in Finance. This subject will not be offered during the coming school year but will be given in the school year 1916-17 provided a sufficient number of students enroll for the course.

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### **Finance V (*Bond Buying*)**

Required in the second term of the Senior year in the course in Finance. This subject will not be offered during the coming school year but will be given in the school year 1916-17 provided a sufficient number of students enroll for the course.

### **Finance VI (*Bond Selling*)**

Required in the second term of the Senior year in the course in Finance. This subject will not be offered during the coming school year, but will be given in the school year 1916-17 provided a sufficient number of students enroll for the course.

## DEPARTMENT OF BUSINESS LAW

Business Law is required throughout the first, third, and fourth years of all the regular courses.

**Law I—Freshman year—Wednesday evening from 7.00 to 8.10.**

### ***Contracts* (12 lectures)**

All the main topics are treated, including among others: how contracts arise; who may be parties and who are not bound under contracts; the various kinds of considerations; contracts that are void for illegality, fraud or other reasons; effects of various kinds of contracts; written and verbal contracts and the law of evidence as applied thereto; how contracts are construed; the Statute of Frauds and what contracts are void under that statute; how parties may terminate contracts and what events terminate them without any act of the parties; when specific performance of contracts may be enforced; actions for damages for breach of contracts and what damages may be obtained. (Mr. Newhall.)

### ***Agency* (5 lectures)**

Under Agency will be treated how an agency may arise; agencies by contract, ratification or estoppel; who may be agents, and who may be principles; how an agency may be terminated; what agencies can, and what agencies cannot be revoked; obligations of the principal and agent to one another; liabilities of principles on contracts made by and for torts committed by agents; liabilities of agents to third persons; responsibility of master for injury by his servant, and to his servant; new Workmen's Compensation Act; also special kinds of agents, such as auctioneers, factors, real estate and other brokers. (Mr. Newhall.)

### ***Carriers*—(including Public Services and Bills of Lading.) (6 lectures.)**

This subject includes the public obligations of carriers and other public services as to rates, facilities and discrimination; regulation and control; liability to consignor and consignee, as insurer and warehouseman; limitation of liability by contract; effect of deviation; rights and obligations of the parties to bills of lading, and their indorsees, both at common law and under the uniform Bills of Lading Act; "straight" and negotiable or "order bills"; connecting carriers; misdelivery; Interstate Commerce Act; lien and compensation. (Mr. Dorman.)

### ***Personal Property*—(including Sales, Mortgages, Pledges, Bailments, Liens, Warehouse Receipts.) (11 lectures.)**

The main topics under personal property are Sales, executory and executed; sales and mortgages of future goods; transfer of title as between vendor and vendee, and risk of loss; insurable interest; statute of frauds; conditions and warranties, express and implied; auction sales; transfer of title as against creditors and subsequent purchasers; negotiable documents of title; delivery and acceptance; seller's lien and stoppage in transit; re-sale and rescission; sales by factors; sales of goods in bulk; C. O. D. sales; mortgages and conditional sales; bailments and fungible goods; warehousemen and warehouse receipts; liens, common law and statutory, except mechanics' liens. (Mr. Dorman.)

## DESCRIPTION OF COURSES

**Law II**—(Junior year—Wednesday evening from 7.00 to 8.10 during the first term and from 8.20 to 9.30 during the second term)

*Negotiable Instruments, Suretyship and Banking Law.* (10 lectures.)

Essentials of negotiability; forms of bills, notes and checks; makers, payees, indorsers and acceptors; bearer paper; rights of holders in due course; real and personal defenses; acceptance of drafts and certification of checks; demand paper; presentment and notice of dishonor; warranties; alteration; discharge.

In connection with negotiable instruments will be treated the subject of bonds and suretyship, express and implied; discharge of surety; surety's right of indemnity and subrogation.

Also the legal relations of banks and depositors; bank's obligation to honor depositor's check; bank's right of set-off; payment of forged or raised checks, etc. (Mr. Dorman.)

*Partnership* (7 lectures)

Sharing of profits and losses; general, special and dormant partners; firm name; liability to creditors; title to firm property; negotiable paper; partners as agents; dissolution by withdrawal, bankruptcy, death, etc. (Mr. Dorman.)

*Real Estate, Mortgages, Probate Law and Insurance* (17 lectures)

How Real Estate is handled; the rights, liabilities and duties of real estate brokers; agreements for the purchase and sale of real estate.

Ownership, Occupation and Transfer of Real Estate; how real estate is acquired and the nature of titles and estates therein (title in fee, dower, courtesy, etc.); the incidents of ownership, easements, rights against adjoining owners, etc.); how real estate is transferred, (deeds of conveyance, rights and liabilities of joint owners), recording of deeds, examination of titles, etc.

Landlord and Tenant; leases, oral and written; liability for rent; liability of landlord and tenant to third persons and vice versa; termination of tenancies, ejection of tenants, etc.

Mortgages: nature of mortgages; how they are created; assignment, discharge, foreclosure, etc.

Probate Law: rights of inheritance; rights of husband and wife; administration of estates; wills; appointment of executors and administrators; settling of estates generally; trusts and trustees; guardians, etc.

Insurance (including Fire, Life, Accident, Marine Insurance, etc.); various kinds of insurance; nature of insurance; insurable interest; steps necessary to protect the insured, etc. (Mr. Newhall.)

**Law III**—Senior Year—Wednesday evening from 8.20 to 9.30

*Bankruptcy and Business Credit* (Including Bankruptcy and Insolvency Assignments for Benefit of Creditors, Receiverships, Credit Representations, Statutes of Limitation, and the means of Collecting Debts.) (9 lectures)

Under this caption will be treated bankruptcy and insolvency under state and federal statutes; the United States Bankruptcy Act; assignments for benefit of creditors, and fraudulent assignments generally; receiverships of all kinds, how appointed and effect of appointment; representations as to credit, mercantile representations; mercantile reports; when debts become barred by the statute of limitations; machinery of courts for collecting bills; poor debtor process; Dubuque process, etc. (Mr. Dorman.)

*Special Topics* (Including Patents, Trademarks, Copyrights, Trade Names, Shipping Laws, Taxation, etc.) (8 lectures)

In this series of lectures will be treated a variety of special topics, not covered by the preceding topics, and not broad enough to call for special topic headings. (Mr. Dorman.)



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### *Corporations and Transfer of Stock* (15 lectures)

Under this topic will be treated the various kinds of corporations; formation under general and special laws; powers of corporations and ultra vires acts; by-laws; officers; capital stock; shareholders' rights and liabilities; powers and liabilities of officers and directors; shareholders' and directors' meetings; transfer of shares; rights of minority stockholders; voluntary associations and joint stock companies; public service corporations; voting trusts; dissolution; reports and returns. (Mr. Dorman.)

## BUSINESS ENGLISH

### *English V (English Composition)*

This course offers a thorough training in the principles of composition with special emphasis upon usage. Particular attention is given to punctuation, the construction of sentences and paragraphs, and the use of words. The object of the course is to enable the student to express his thoughts freely, clearly and forcibly; the writing of straightforward English is the end toward which the efforts of the student are directed. A feature of the course is the preparation and criticism of themes bearing upon business subjects.

This course is open to regular students in the School of Commerce and Finance as an elective and may be taken as an additional subject in any of the regular courses upon payment of a fee of \$6.50. The course may be taken by special students, the tuition being \$15.

Thursday evening from 7.00 to 7.45. (Mr. Goulding.)

## COMMERCIAL SPANISH

### *Spanish I (Elementary Spanish)*

This course is open to regular students in the School of Commerce and Finance as an elective. It may be taken by special students, the tuition fee being \$15 payable in advance.

The opening of the Panama Canal and the rapid growth of our business relations with South America have made Spanish the leading Romance language in America. Many men, seeing the great opportunities in business with South American countries, feel that a command of Spanish is essential to success. This course is intended to serve as a basis for the study of Commercial Spanish. Special attention is paid to correct pronunciation and accent, and practice is given tending to develop a forceful and easy style of conversation.

Tuesday and Thursday evenings throughout the School year from 7.00 to 7.45. (Mr. Logie.)

### *Spanish III (Commercial Spanish)*

This course is open to regular students as an elective. It may be taken by special students, the tuition fee being \$15.

In this course the student is drilled in reading, writing, translating and conversing on commercial subjects. Special attention is paid to commercial correspondence, business terms and South American customs.

Tuesday and Thursday evenings throughout the School year from 7.45 to 8.30. (Mr. Logie.)

## DEPARTMENT OF BUSINESS ADMINISTRATION

### *Administration I (Commercial Credits)*

Required during the first term of the Junior year in the courses in Business Administration and Finance. This subject may be taken by any man who desires to secure the benefits to be derived from this excellent course of lectures. The tuition fee is \$15, payable in advance.

A credit man should possess a thorough knowledge of business law and accounting, and he should be familiar with the functions of the buying, pub-

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licity and selling departments of the organization in which he is employed in that he may fully appreciate the relations of his work to these administrative positions. The Business Administration course offers an ideal preparation to those who desire to become credit men. The credit department in modern business organization is a matter of comparatively recent origin, and the demand for properly trained credit men should act as an inducement to those who are willing to prepare for this comparatively new field of business specialization.

This subject will be presented in eighteen lectures by six credit men of broad experience. The first four lectures will deal with general principles of commercial credits such as: the qualifications for a credit man; relation of credit department and sales departments; the organization and administration of a credit department; records and files; requirements for a credit risk; the opening of credit accounts; investigation of customers; following of collections; obtaining of security; abuse of cash discounts; analysis of financial statements; settlements or adjustments; the purpose and work of the National Association of Credit Men, etc. These will be followed by twelve lectures, dealing with different lines of credit, both wholesale and retail, bank credits and commercial paper. The course will close with two evenings devoted to the discussion of practical problems.

### *Lecturers*

Mr. Edward L. Harris, New England Credit Manager, Swift & Company  
Mr. John J. Mundo, Manager Credit Department, Jordan Marsh Company  
Mr. Gardiner E. Thorpe, Superintendent of The Bradstreet Company  
Mr. Norman I. Adams, A.B., Manager Credit Department, The National Shawmut Bank  
Mr. A. P. Brown, of the firm of F. S. Moseley & Company

### *Administration II (Publicity)*

Required during the first term of the Junior year in the Business Administration course. These lectures are given by specialists of wide experience, and the course is under the direction of Mr. William J. Boardman of the firm of George Batten Company.

Men who are not pursuing any course in the School of Commerce and Finance, but who desire to secure a knowledge of the fundamental principles of modern publicity methods may register for this course of lectures,—the tuition fee for which is \$15.

A knowledge of the practical working of advertising, and the underlying principles of scientific distribution through publicity and proper selling methods, are matters of vital importance to men who choose a business career.

There are excellent opportunities open to men properly fitted to take positions in the advertising departments of large mercantile and manufacturing establishments. The successful advertising man must have a particularly broad knowledge of business affairs as well as a keen insight into human nature. The former is provided for in the programme of the Business Administration Course. It affords a broad practical training in those subjects with which the advertising man's work is closely correlated.

The following outline will convey some idea of the scope and character of the Course in Publicity.

The Course is divided into four groups of lectures dealing with

- (a) Direct Advertising
- (b) Retail Advertising
- (c) National Advertising
- (d) General and special topics not falling under the foregoing heads

Group "a" deals with the proper use of sales letters, circular letters, booklets, pamphlets, samples, etc., giving instruction not only in the writing and designing of these materials, but also in the practical and mechanical aspects

## SCHOOL OF COMMERCE AND FINANCE

of the work,—such as proofreading, selection of type, paper, cover stock, bindings, etc. Various specimens are studied and discussed and the students are required to prepare written work, correct proofs, estimate cost of different kinds of pamphlets, booklets, etc.

Group "b" deals with the proper use of newspapers and other mediums for building up the trade of a retail business. It covers the selection of the proper subjects to advertise and of arguments which prove most effective; styles of writing, of illustration, of type display; the preparation of plates and electrotypes; the selection and proper judging of advertising mediums.

Group "c" deals with the problems of the manufacturer who wishes to make his brand of goods known to the country at large; the questions of when to advertise, how to advertise, how extensively to advertise; the selection of what part of the market to address, discussion of the different mediums available; securing co-operation of the selling force and of wholesale and retail merchants; the analysis of the specific results sought by means of advertising; selection of periodicals; preparation of argument, design, typography, etc.

This theoretical work is reviewed and reinforced by the practical working out of the details of several National advertising campaigns. Written work in the preparation of copy and plans is called for.

Group "d" includes general discussions of matters common to all the previous groups; studies of the Channels of Trade; discussion of advertising media from the point of view of their publishers; special work on the proper use of trade papers and trade follow-up.

### *Lecturers*

Mr. William J. Boardman, of the firm of George Batten Company

Mr. Paul L. Lewis, Manager of Service Department, Wood, Putnam & Wood Company

Mr. John J. Morgan, of the firm of Morgan & Morgan

Mr. Charles C. Parlin, Manager of Division of Commercial Research, Curtis Publishing Company

### *Administration III (Buying and Commercial Resources)*

Required during the second term of the Junior year in the Business Administration course. This course is open to any man over eighteen years of age who desires to enroll as a special student for this subject only. The tuition fee is \$15, payable in advance.

This course consists of eighteen carefully prepared lectures covering the qualifications and duties of purchasing agents, the organization and administration of purchasing departments, and a study of raw materials and transportation facilities. The lecturers are specialists of recognized ability who bring to the members of the class the gist of their practical knowledge, so that those who take the course may thus secure useful information which it might take years to acquire through practical experience alone.

The course divides itself naturally into three groups:

1. Four lectures on general principles including the organization and administration of a purchasing department, the essential qualifications of a successful buyer, relation of the purchasing department with the other departments of a business, records of a purchasing department, methods of securing and filing quotations, price lists, etc., attitude of the buyer towards salesmen who call at his office, quality tests, etc.

2. Twelve lectures on raw materials and transportation. This part of the course is designed to meet the need of business men of a clear conception of our own materials and products and the habitat of the more important foreign materials. The subject is one of increasing importance to the business man on account of the keenness of competition and the various attempts to get control of the sources of materials by the large corporations. In the lectures on raw materials an analysis is made of materials selected as far as possible to



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illustrate some particular type of commercial organization. The services of each party participating in the assembling and handling of raw materials and the means whereby the products are distributed are treated, and especial emphasis is placed upon the sources of raw materials in an effort to interpret the Earth in terms of its usefulness to humanity. The process of manufacture of some of the more important articles are given in order to aid in understanding any peculiarities in them affecting the course of trade.

Under the section of the course given to Transportation an effort is made to show the relation of transportation facilities to commercial development and to show the means of distribution of the various raw materials from their habitat to their place of manufacture, and thence to consumption. A brief description of the principle trade routes and the commerce that passes over them is given.

3. Two lectures on retail buying; the organization of a retail merchandising department, ways in which the retail buyer differs from the wholesale buyer, purchasing for the retail trade, etc.

### *Lecturers*

Mr. Charles A. Brown, General Purchasing Agent, Regal Shoe Company  
Mr. Ralph B. Wilson, Instructor in Economics at Tufts College  
Mr. Edgar H. Savage, Purchasing Agent, W. F. Schrafft & Sons Company  
Mr. F. P. Mooney, Purchasing Agent, Charles H. Tenney & Company  
Mr. H. R. Lane, Assistant Merchandising Manager, William Filene's Sons Company

### **Administration IV (Salesmanship)**

Required throughout the second term of the Junior year of the Business Administration course.

Any man who desires to acquire a knowledge of the fundamental principles of salesmanship may enroll for this course of lectures, the tuition fee being \$15. It is without a doubt one of the most useful and essential subjects offered by the School of Commerce and Finance. Every man has something to sell,—either goods or services, and the ability to sell is a valuable qualification to possess. The purpose of this course of lectures is to develop that ability.

The course is under the directorship of Mr. Harry N. Haven, Manager of the Phoenix Mutual Life Insurance Company.

The subject is presented in eighteen lectures and demonstrations. The following brief outline will convey some idea of the scope and character of the course.

1. Salesmanship Defined  
The Mental Law of Sale
2. The Salesman  
The Old Type and the New  
How to Value Men  
Qualities Necessary for Efficiency
3. How to Become Mentally Efficient  
Thinking and Remembering
4. Imagination in Business  
Its Practical Value to the Salesman
5. The Salesman's Most Valuable Asset  
The Importance of Health
6. The Dominant Will and How to Obtain It
7. How to Sell Through Suggestion  
Man's Greatest Aid in Self Development
8. Concentration  
A Literary Contribution to Salesmanship
9. How to Know Your Goods
10. How to Know the Other Fellow  
Some Types You Have Met

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11. Motives which Induce Sales
12. Some of the Different Sales Letters
13. Initiative
14. Demonstration
15. Some More Points of Value
16. The Law of Growth
17. Practical Extracts from Well Known Authors on Salesmanship
18. Examination

### Administration V (*Life Insurance*)

Required in the first term of the Senior year of the Business Administration course. This series of lectures is open to any man over eighteen years of age who desires to take the course as a special student. The tuition fee is \$15.

Life Insurance, as conducted by our standard American companies, occupies a commanding position in comparison with all world movements in its economic and beneficent relation to humanity. While insurance companies and managing agents deserve unusual credit for building a system of such enduring qualities that plays so great a part in equalizing business conditions and in the amelioration of mankind, the comparative newness of the system and its rapid growth have prevented a proper understanding of many of its important features, both in its relation to the public and as a vocation.

The business of Life Insurance needs the services of and offers great opportunities to young men of high ethical standards and ability. This carefully planned series of lectures is designed to convey to the student the fundamental principles which underlie the nature and uses of life insurance. It will deal exhaustively with the classification of policies, special forms of life insurance, the mechanical or actuarial side of life insurance, the organization and management of life insurance companies, and the selling of life insurance. The course should be particularly valuable to the young man who contemplates going into this very important occupation. The lectures should also be of value to the general business man who desires to acquire an all-round training for a business career.

The course will be based upon the newly published work "Life Insurance, Its Principles and Practices," prepared under the auspices of the National Association of Life Underwriters by Dr. S. S. Huebner of the University of Pennsylvania. The course is divided into five parts in accordance with the outline of Dr. Huebner's book.

- I. The Nature and Uses of Life Insurance
- II. Science of Life Insurance
- III. Special Forms of Life Insurance
- IV. Organization and Management of Life Insurance Companies, including Agency Work
- V. Legal Phases of Life Insurance

Part I consists of two lectures dealing with the elements underlying a sound plan of life insurance, personal and family uses of life insurance, business uses of life insurance, etc.; and three lectures on classification of policies, term insurance, endowment insurance, limited payment policies, annuities, joint life insurance, etc.

Part II consists of four lectures on the science of life insurance, mortality tables, theories of probabilities, fundamental principles underlying rate-making, the reserve, surrender values, policy loans, etc.

Part III consists of two lectures on special forms of life insurance, fraternal and assessment insurance, industrial insurance, group insurance, etc.

Part IV consists of four lectures on types of legal reserve companies, organization of companies, home office organization, agency organization and management, and the selling of life insurance.

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Part V consists of three lectures on life insurance investments, government supervision of life insurance, legal interpretation of the policy and application, insurable interest, the law pertaining to the beneficiary, the law of agency, assignment of policies, etc.

### *Lecturers*

- Mr. William C. Johnson, Vice-President and General Manager, The Columbian National Life Insurance Company
- Mr. Harry N. Haven, New England Manager, Phoenix Mutual Life Insurance Company
- Mr. Herbert B. Dow, Actuary, New England Mutual Life Insurance Company
- Mr. Franklin W. Ganse, Manager of Home Office Agency, The Columbian National Life Insurance Company
- Mr. Arnold A. Rand, Vice-President, John Hancock Mutual Life Insurance Company
- Mr. Lemuel G. Hodgkins, Deputy Insurance Commissioner, Commonwealth of Massachusetts
- Mr. Guy W. Cox, Counsel for the John Hancock Mutual Life Insurance Company and the Metropolitan Life Insurance Company

### **Administration VI (*Real Estate*)**

Required in the first term of the Senior year in the Business Administration course. This course of lectures is open to any man over eighteen years of age who desires to benefit from the knowledge to be gained therefrom. The tuition fee is \$15, payable in advance.

This subject is presented in eighteen lectures by realty men of recognized ability and is under the direction of Mr. S. Leland Montague, formerly Appraiser in the Mortgage Department of the United States Mortgage and Trust Company, New York.

The Real Estate course may be described under two headings: the first division consisting of lectures presenting in an orderly and logical way the facts which are true of real estate wherever located; and the second division consisting of lectures given by specialists of prominence in realty affairs in the city of Boston. In other words, the first nine lectures deal with the general principles underlying realty values and the laws of change, growth and depreciation. The last nine lectures deal with the practical side of real estate and are given by acknowledged experts. Briefly, they may be classified as follows:

- Three on Brokerage
- Three on Agency
- One on Operating
- One on Investing
- One—A General Summary

The preliminary course is based on the real estate history of over one hundred American cities and is designed to be of genuine value to brokers, agents, operators, bankers and trustees, assessors and appraisers. The first six lectures treat of classification by type, utility being the basis; of the effect of one type upon another; of the different city districts and their reactions one upon another; of growth—radical and central; of the classification of cities, and the factors common to all; of the economic city, and the general factors supporting and maintaining our centres of population irrespective of their political boundary, and of the study and use of city statistics. The last three lectures treat of values from the viewpoint of the investor, banker and broker, and of appraising as an exact science.

The remaining nine lectures deal with the practical side of real estate business, and are given by specialists of recognized ability.

During the second half year there will be an advanced course in Real Estate open to graduates of the preliminary course and to those meeting the entrance

## SCHOOL OF COMMERCE AND FINANCE

requirements. This course is designed for those who desire advanced laboratory work. Practical problems are discussed, including selling, exchanging, management of property, fire insurance, securing mortgages and appraisal. There will be six lectures on sales, three on management of property, one on fire insurance, two on mortgages and five on valuation, besides the summary. These lectures will be given by prominent specialists. The tuition fee is \$15.

### Administration VII (*Sales Managership*)

Required in the second term of the Senior year of the Business Administration course and in the second term of the Junior year in the course in Finance. This subject may be taken by any man over eighteen years of age who desires to acquire a knowledge of the complex problems of sales managership. The tuition fee is \$15.

The School of Commerce and Finance is the first institution to offer a complete course dealing exclusively with the fundamental principles of Sales Managership. The most efficient selling force cannot produce the most efficient results unless it is properly managed. It is safe to say that the sales manager plays a more important part in the success of business in general than any other department head. Too little attention has been paid to this phase of modern business administration in the past, but the more progressive sales managers are making history through the application of efficiency principles and the establishment of sound fundamental methods. It is the object of this course to treat these principles and methods broadly and intelligently, and so that they may be applied to any line of business where a selling force has to be organized and administered. The business world is in need of just this kind of education as a means of promoting efficiency in that department of business which serves as the fountain head of distribution.

This course has been prepared and will be given by men whose wide experience as successful sales managers should guarantee the worth of the course. Active sales managers will condense in lectures years of experience in such a way that those taking the course will acquire an intimate knowledge of the work and responsibility required of a sales manager.

The intent is to present in a clear and practical manner the actual work of sales management. In so far as is possible the course will be illustrated with forms used in the conduct of sales departments for reports and statistical records. Some text-book assignments may be given during the course, and an endeavor will be made to put all those who take the course in touch with the best that has been written on the subject.

"The Salesmen" will be given considerable thought—Who is a Salesman—What are his Essential Qualities—How to Hire a Salesman—The Analysis of a Salesman's Work—The Salesman's Expense Account and the Collection of Accounts—Waking the Salesman up to their Reserve Powers—Paving the Way for Salesmen—Working with Salesmen on the Territory—Shall the Salesman Sell His Advertising with His Product?

"Territorial Supervision of Salesmen"—The Sales Manager's Direct Relation to the Men in the Field—Special Salesmen—Field Managers—Branch House Managers—City Sales Managers—Country Sales Managers. The sales manager's relations to the factory, the office and the advertising department is an important feature of the course.

"The Sales Campaign"—Planning the Campaign—How it is Conducted.

An important feature of the course will be the presentation of sales managership with relation to retail selling, the sale of public utilities and the sale of stocks, bonds, insurance, etc. In fact, the lecturers will endeavor to present the subject from as many different standpoints as possible. The nature of the businesses in which the lecturers are engaged suggest that the course will not be confined to any one particular field, but will cover a large number of the different problems which confront sales managers in various lines.

## DESCRIPTION OF COURSES

### *Lecturers*

Mr. Franklin W. Ganse, Manager of Home Office Agency, The Columbian National Life Insurance Company  
Mr. G. P. Rogers, Sales Manager, Loose-Wiles Company  
Mr. E. M. Fisher, Supervisor of Selling, William Filene's Sons Company  
Mr. William C. Bamburgh, Advertising Manager, New England Telephone and Telegraph Company

### **Administration VIII** (*Industrial Organization and Business Management*)

Required in the second term of the Senior year of all of the regular courses.

This course purports to give a clear conception of the principles underlying the successful conduct of industrial enterprises. In matters of industrial organization the course considers the principles underlying the modern organization of business; in matters of management particular emphasis is given to recent applications of system and efficiency methods. After a brief outline of the tendencies of industrial organization, its forms and chief problems, the course continues with a study of industrial locations, types of factory buildings and equipment, the complex problems arising from the concentration and integration of industry, special emphasis being placed on problems of internal organization and methods. Concrete illustrations of modern practice in business management are found in the selection and placing of employees, the management of labor, just methods of wage payment, cost and various efficiency methods, bonuses, welfare inducements, the relation between employer and employee, and the training of employees according to the principles of vocational guidance. Tests of efficiency of business organization and management, such as size, flexibility, continuity of policy, stability, financial and legal liability, scientific placement and promotion follow the analysis of the subject.

It is the intention to make the course a scientific treatment of industrial management in order to give both the accountant and the general student of business a presentation of the underlying principles of the science of management. Especial emphasis is placed upon modern efficiency methods, and after the general survey, the course will center around one particular efficiency method, making the course concrete and practicable, thus giving the student something tangible and ready of application in his daily walks of life. The work is carried on by lectures, assigned readings, and informal class discussions.

Wednesday evening from 7.00 to 8.10. (Mr. Wilson.)

## *SCHOOL OF COMMERCE AND FINANCE*

### GRADUATES OF THE SCHOOL OF COMMERCE AND FINANCE

1914

#### Bachelor of Commercial Science

DANIEL ASHER, B.S., LL.B.	Worcester
THOMAS H. BURTON	Winchester
EINAR W. CHRISTENSON	Arlington
GEORGE S. CLARKSON	Roxbury
WILLIAM S. COOPER	Medford
CHARLES H. CORNELL	Chelsea
WILLIAM B. CUSHING	Newton
FREDERICK W. DAVISON	Dorchester
WILLIAM L. ESTERBERG	Reading
HERBERT FALLON	Dorchester
HARRY J. FERNGOLD	East Boston
HERBERT C. FRASER	Watertown
BENJAMIN W. FULLER	Milton
GUY L. HARVEY	Boston
EDGAR P. HAWES	Roslindale
RAYMOND O. KEATING	Woburn
JOSEPH A. KUEBLER	Winthrop
WILLIAM J. LYONS	Boston
WILLIAM J. MAGEE	Boston
HARVARD L. MANN	East Dedham
HAROLD J. PARSONS, <sup>3</sup> A.A.	Worcester
ABIJAH PEARSON	Roxbury
ISAAC RICH	Roxbury
CHARLES F. RITTENHOUSE, <sup>5</sup> C.P.A.	Jamaica Plain
WILLIAM D. SMITH, C.P.A.	Dorchester
WALTER F. SPINNEY	Allston
MAURICE B. SPINOZA	Roxbury
CHARLES E. STEARNS, C.P.A.	Boston
ROBERT M. TAYLOR	West Somerville

1915

#### Master of Commercial Science

WILLIAM S. COOPER, B.C.S.	Medford
CHARLES H. CORNELL, B.C.S.	Chelsea
HERBERT FALLON, B.C.S.	Dorchester
HARRY J. FERNGOLD, B.C.S.	East Boston
HERBERT C. FRASER, B.C.S.	Watertown
JOSEPH A. KUEBLER, B.C.S.	Winthrop
WILLIAM J. LYONS, B.C.S.	Boston
HARVARD L. MANN, B.C.S.	East Dedham
ISSAC RICH, B.C.S.	Roxbury

## GRADUATES

WILLIAM D. SMITH, B.C.S., C.P.A.  
 MAURICE B. SPINOZA, B.C.S.  
 CHARLES E. STEARNS, B.C.S., C.P.A.

Dorchester  
 Roxbury  
 Boston

### Bachelor of Commercial Science

CLARENCE E. AKERSTROM  
 BENJAMIN ASHER  
 ROBERT BRUCE  
 PHILIP F. CLAPP  
 WILFRED A. CLARK  
 CASPER COHEN  
 JAMES B. CONWAY  
 ALBERT B. CURTIS  
 ROYAL M. CUTLER  
 WILLIS H. DOE  
 HENRY T. DOLAN  
 CLIFTON W. GREGG  
 MILBURN D. HILL  
 EDWARD I. HOLLANDER  
 ROBERT H. HUNTER  
 EDWARD S. JENKINS  
 IRVING E. JONES  
 JAMES S. KENNEDY  
 MARTIN C. LEE  
 JOHN C. LORD  
 MYRON F. LORD  
 FRANK L. MCCARTHY  
 EDWIN E. MCCONNELL  
 RALPH C. MACDONALD  
 WILLIAM A. MANSFIELD  
 LESTER C. NUTTING  
 HERBERT L. PERRY  
 JAMES C. PURINTON  
 EDWARD C. RICHARDSON  
 JAMES F. ROCKETT  
 WILLIAM W. SHARPE  
 DALE M. SPARK, C.P.A.  
 RALPH G. STETSON  
 FRANK J. SULLIVAN  
 DANA S. SYLVESTER, LL.B.  
 WILLIAM E. TIERNEY  
 EARLE P. TYLER  
 BRUCE R. WARE  
 LEO WASSERMAN  
 WILLIAM H. WHEELER  
 CARL W. WRIGHT

Medford  
 Worcester  
 Roxbury  
 Roxbury  
 Medford  
 Chelsea  
 Boston  
 Roxbury  
 Brockton  
 Medford  
 Salem  
 Beverly  
 Salem  
 Chestnut Hill  
 Dorchester  
 Quincy  
 Newtonville  
 Everett  
 South Boston  
 Brookline  
 Dorchester  
 Arlington  
 Hyde Park  
 Walpole  
 Somerville  
 West Roxbury  
 West Somerville  
 Beverly  
 Waltham  
 Boston  
 Forest Hills  
 Dorchester  
 Boston  
 South Boston  
 Brookline  
 Lawrence  
 Everett  
 Newton  
 Roxbury  
 Somerville  
 Somerville



## SCHOOL OF COMMERCE AND FINANCE

### CLASS OFFICERS, 1914-15

#### Class of 1915

*President*, E. C. RICHARDSON  
*Vice-President*, B. R. WARE

*Secretary*, C. W. GREGG  
*Treasurer*, C. E. ÅKERSTROM

#### *Executive Committee*

A. B. CURTIS  
F. W. BATES  
J. C. PURINTON

#### Class of 1916

*President*, C. R. MARVIN

*Vice-President*, J. S. SNOW

*Sec. and Treas.*, CHARLES GALITSKY

#### *Executive Committee*

W. H. WALPOLE  
J. J. WALLACE  
G. B. WARDWELL

#### Class of 1917

*President*, A. L. BILLINGS

*Vice-President*, C. R. MARTIN

*Sec. and Treas.*, W. G. HILL

#### *Executive Committee*

J. E. GILCREAST	W. P. HUSBAND, Jr.
P. A. ANDERSON	JOHN SPEIRS
J. T. JOHNSON	R. S. EMERSON

#### Class of 1918

*President*, E. F. MESSINGER

*Secretary*, C. J. MCCARROLL

*Vice-President*, J. H. MELZARD, Jr.

*Treasurer*, A. J. BRUNDAGE

#### *Executive Committee*

E. H. BROOKE  
F. R. CATHERIN  
PERCY LANTZ

## SCHOOL OF COMMERCE AND FINANCE ALUMNI ASSOCIATION

### Founded in 1915

#### Officers for 1915

*President*, C. E. STEARNS

*Second Vice-Pres.*, H. J. FERNGOLD

*First Vice-President*, F. W. DAVISON

*Secretary*, H. L. MANN

*Treasurer*, C. H. CORNELL

#### *Executive Committee*

R. O. KEATING	J. A. KUEBLER
G. S. CLARKSON	H. C. FRASER



# APPLICATION FOR REGISTRATION

(See other side for instructions)

## School of Commerce and Finance of the

Boston Young Men's Christian Association  
316 Huntington Avenue, Boston, Mass.

Date.....191

I,..... age..... years,  
hereby apply for admission to the School of Commerce and  
Finance in the.....course, as

a { Freshman  
{ Sophomore with Advanced Standing

Residence .....

.....Telephone .....

Business { Name of firm .....

Address { Address .....

Telephone.....

What are the duties of your present position?.....

.....

If a college graduate give name of college and degree.....

.....

If a high school graduate give name and address of school.....

.....

If not a high school graduate state particulars of your school

training .....

.....

.....

Give a brief outline of your business experience.....

.....

.....

.....

.....

Please state how you first heard of the School of Commerce and

Finance, whether through a newspaper advertisement, a catalog,

a friend or whatever other means.....

.....

.....

Approved.....

**NOTE:** Only those who desire to register for a complete course are required to fill out an application blank. Those who enroll as special students, taking one or more subjects but not a complete course, are required merely to fill out a registration card which will be furnished upon application.

## INSTRUCTIONS FOR REGISTRATION

Fill out this application for registration and bring or send it to the School of Commerce and Finance, 316 Huntington Avenue, or (between the dates of July 15 and October 1) 73 Tremont Street, Boston.

Fill in the name of the course which you elect to take in the space provided. (It is understood that the applicant may later change the course elected if he so desires). If you intend to enter as a Freshman, draw a line through the words "Sophomore with Advanced Standing"; if you intend to enter as a Sophomore with Advanced Standing, draw a line through the word "Freshman."

Those who enroll as Sophomores with Advanced Standing are required to take an examination in bookkeeping on the evening of either September 14 or 16. See calendar on page 2.





# AUTOMOBILE SCHOOL



Boston Young Men's Christian Association  
316 HUNTINGTON AVE., BOSTON, MASS.



*Catalog*  
OF THE  
**AUTOMOBILE  
SCHOOL**  
FIFTEENTH YEAR  
1915-1916



DEPARTMENT OF EDUCATION  
OF THE  
BOSTON YOUNG MEN'S CHRISTIAN  
ASSOCIATION

# Calendar



## Operators' Course

DAY CLASSES are formed every four weeks, the opening dates of which are as follows:

1915	
September 13	November 8
October 11	December 6
1916	
January 3	April 24
January 31	May 22
February 28	June 19
March 27	July 17
August 14	

EVENING CLASSES are formed every nine weeks, the opening dates of which are as follows:

1915	1916
October 4	February 7
December 6	April 10

## Machine Shop Course

Inasmuch as the work is individual, students may enter the DAY COURSE at any time during the year and the EVENING COURSE, between October 4 and February 1.

## Road Course

Road lessons are given by appointment, day or evening.

## Holidays

September 6, October 12, November 25, December 25, February 22, April 19, May 30, June 17, July 4.



# Officers of Administration



## General Administrative Officers

ARTHUR S. JOHNSON, *President*

ALBERT H. CURTIS, *Vice-President*

GEO. W. BRAINARD, *Recording Secretary*

LEWIS A. CROSSETT, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*



## Educational Committee

WILLIAM E. MURDOCK

ALBERT H. CURTIS

WM. C. CHICK

MORGAN L. COOLEY

GEORGE H. MARTIN



## Educational Administrative Officers

FRANK P. SPEARE, *Director of Education*

GALEN D. LIGHT, *Asst. Director of Educ. and Bursar*

WALTER G. HILL, *Asst. Bursar*

CHARLES B. GRAY, *Secretary*

ERNEST H. BROOKE, *Registrar*

F. L. DAWSON, *Field Secretary*



## Advisory Committee

ELLIOTT LEE, *Ex-President Mass. Automobile Club*

J. S. HATHAWAY, *Manager White Car Co.*

C. P. ROCKWELL, *Pres. and Treas. C. P. Rockwell, Inc.*  
(*The Jeffrey Car*)

# Faculty



FRANK G. WESTWOOD, *Manager*

## Operators' Course

ARTHUR ASHWORTH, *Superintendent*

LEONARD E. FROST

CHARLES L. PIERCE

JOHN F. EVERIN

EMIL FACKTOROFF

JAMES MACKAY

## Road Course

WILLIAM B. COWEN

GEORGE B. MULLAY

BURT GILBERT

## Machine Shop Course

RALPH J. KARCH, *Superintendent*

JOHN H. SALZGEBER

WALTER S. GILBERT

## General Information

The Boston Young Men's Christian Association has, for years, operated one of the most extensive and thorough school systems in the country. The Department of Education is organized as a university, having the following wholly distinct schools: the Huntington Preparatory School, with day and evening sessions; the School of Business, with day and evening sessions; the School of Commerce and Finance, of college grade, granting the Degrees of B.C.S. and M.C.S., with evening sessions; the Polytechnic School, offering many courses in Engineering and applied science, including one, two and three years' courses in applied electricity, with day and evening sessions; the Evening Law School, with a four years' course, leading to the Degree of LL.B., with evening sessions; the School of Co-Operative Engineering, with day sessions, enabling boys to earn while learning, offering four years' courses in Mechanical Engineering, Electrical Engineering, Civil Engineering and Chemical Engineering; the Automobile School, offering day sessions throughout the year and evening sessions from October to July and covering every phase of the automobile industry with the exception of the manufacture of cars.

This great system of schools requires the services of over one hundred expert teachers, lecturers and assistants and the expenditure of a large amount of money. The attendance is nearly three thousand men and boys annually. Prospective students will note that they are entering a long-established, recognized school where satisfactory results are assured, and their best interests conserved.

### THE VALUE OF A SCHOOL

Much has been said and written as to the methods necessary to become a skillful chauffeur or repair man and how the essential qualifications may best be obtained. This controversy is not peculiar to the automobile industry, but to every trade, occupation and profession. The time was when the law student obtained his legal education in the office of a lawyer. He attended to detail work, read what he could, absorbed as much as possible and finally passed very simple examinations, if any were required, and entered practice. Such a course was found, however, to be decidedly unsatisfactory. If the student happened to be in an office where the practice was largely criminal, a knowledge of criminal law was gained, but little else; if in an office where real property or equity received the bulk of attention, these were his strong points. But, in any case, he was a one-sided man.

The same was true of the medical student who studied with a doctor; he was a narrow man. With the progress along educational lines, there came a demand for broadly trained lawyers and doctors, and, as a result, the accumulated knowledge and experience of the legal and medical professions were presented to students by men who gave their entire time to teaching and supervision. Consequently the young lawyer or doctor of today is an all-around man, thoroughly conversant with the theory and practice of his profession, and in possession of the experience of ages.

The shop-trained mechanic follows along the same lines. When he learns a certain trade or part of a trade, in a shop, he picks up what he can, but no one is responsible for his advancement or final attainments. If naturally bright and of a retentive memory, he will, in time, become skilled in certain operations, but he rarely rises above the bench and becomes a superintendent or mechanical engineer who is the product of the technical school. In the training of men for the automobile industry, the same plan holds good. A school is the place, provided the school is a good one, well equipped, well taught and properly conducted.

## THE AIM OF OUR SCHOOL

1. To fit chauffeurs thoroughly for the responsibility of operating a car on a public highway; to equip them with a thorough knowledge of the mechanism; the requirements for its care; the troubles which are likely to occur; their symptoms, tests and remedies; to make adjustments and drive skilfully.

2. To provide a thorough and strictly up-to-date Machine Shop Repair course. This course includes instruction on motor trucks and pleasure vehicles, that the student may secure and hold a position in any well regulated repair shop.

3. To train men as demonstrators and salesmen and for the business in general. The courses are also of great value to the man whose business brings him in touch with the automobile trade as a dealer in sundries or as press representative.

4. To meet the needs of the prospective purchaser, that he may buy intelligently.

5. To enable the owner to understand the mechanical principles and requirements for care, so that he may save repair bills, enjoy his car and get longer service from it.

## THE FACULTY

The Faculty of the Association Automobile School has been selected with great care regarding technical skill, high moral character, interest in the work and ability to teach. Every member is a graduate of the school.

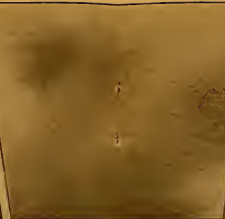
The students are taught by these men of technical training, practical shop experience and refinement. These men give their full time to the school, and are interested in the personal development and success of every student.

They regard the work of a chauffeur and repair man as a dignified calling, and have sought to accumulate all the knowledge and experience obtainable from the most reliable sources, and to present this information in an attractive and useful form. It is safe to state that no young man with any mechanical ability, who also possesses character and tact, can fail, upon taking our Automobile course, to become a very useful man to anyone requiring a competent chauffeur and repair man, a truck driver or garage hand.

## EQUIPMENT

The constant and rapid changes in automobile engineering make it difficult and extremely expensive to keep the equipment of an automobile school up to the minute. Until the engineering practice becomes settled and standardized, no automobile school can afford to meet every change. Our policy has been to equip the school with standard cars, parts and accessories, and then to illustrate the modifications as fast as they take place. All technical schools find the equipment account a heavy burden, and the automobile development has been so sudden, constant and radical, that no other school, to our knowledge, except that in Boston, has been able to even keep in sight of the procession. We have invested thousands of dollars in live equipment, and the present year will modernize, re-build, substitute and bring it up to date.





SHOP PRACTICE  
ON THE ROAD

BUILDING

TIRE INSTRUCTION  
MACHINE SHOP

# The Courses

The automobile fraternity, owners and employers, are well aware of the great responsibility which rests upon a chauffeur, or operator. Not only is he responsible for the care of an expensive mechanism, but human life is directly under his charge. The owners and occupants of every automobile, and likewise the public, demand their proper share of protection. In view of this fact, the following courses have been worked out thoroughly and adopted.

## CHAUFFEURS' AND OPERATORS' LECTURE COURSE Pleasure Cars or Motor Trucks

This course is designed to assist those who wish a thorough knowledge of the construction and care of the automobile and comprises demonstration lectures in which are presented the operative principles, different types of cars, requirements for care and the difficulties which are likely to occur in connection with each part, together with their symptoms, tests and remedies.

The following syllabus indicates the principal subjects of the lectures: analysis of the gasoline vehicle; names of parts and their purpose; theory of explosion; operative principles of the internal combustion engine as used in the pleasure car or motor truck.

Various designs of engines and their requirements for care; methods of timing and setting valves; weak compression, causes and remedies.

Carburetors, various types; difficulties and remedies.

Cooling systems and requirements for care; governor and throttle action.

Study of ignition systems; various methods and parts of equipment; derangements; symptoms and remedies.

Operative principle of Low and High Tension Magnetos, together with illustrations regarding the care, difficulties, symptoms and remedies of same.

Electric light generators and self-cranking motors and their care and maintenance.

Requirements for care and adjustment of clutches, and various types of change-speed gears.

Study of differential gear; centre-shaft drive; double-chain drive, worm gear drive and care of the same.

Road derangements and remedies; care and repair of tires; care of lamps and accessories.

Construction of steering gear and brakes, and action of controlling levers on the road.

Systematic inspection of car and duties of a chauffeur.



Touring necessities; tool equipment; lighting systems, gas and electric, and care of the same; rules for preparing a car for a trip and starting engine, self-starting devices, various types and care of same.

The lecture course is one of the most valuable features of the entire School and is characterized by scientific, practical instruction relating to every phase of the automobile industry, care and up-keep, possible derangements, their symptoms and cure. No owner, intending purchaser or operator of a pleasure car or motor truck can fail to secure the greatest benefit from these lectures.

#### **SCHEDULE**

**Day Course.** Fifteen lectures will constitute the course and will be repeated every four weeks throughout the year.

**Evening Course.** Lectures on Monday and Thursday evenings at 7.30, beginning Monday, October 4, and continuing for nine weeks. These lectures are repeated throughout the year except during July, August and September.

For calendar see page 2.

For tuition rates see page 14.

### **CHAUFFEURS' AND OPERATORS' SHOP COURSE** **Pleasure Cars or Motor Trucks**

In the course, students receive in actual shop practice the work as outlined in the Lecture Course, and each student is required to perform the duties developing upon operators in the care, control and management of pleasure cars and motor trucks; to take down and reassemble and adjust engines and cars, getting practical experience in grinding valves, testing for weak compression and applying the remedies, removing carbonization, adjusting connecting rods, timing engines, dissecting carburetors and locating difficulties and adjusting properly; testing for ignition difficulties, circuiting the lines to locate trouble, adjusting vibrators, locating skipping cylinders, cleaning spark-plugs, testing batteries and caring for them when used for ignition, electric lighting or self-starting, dissecting high and low tension magneto, timing magneto, adjusting and cleaning circuit breaker, locating and remedying magneto difficulties; adjustment and care of steering gear, springs, wheels and brakes; care of lighting systems and self-starters; testing and adjusting for proper supply of oil to cylinders; care of tires, removing, vulcanizing and replacing the same.

We wish to emphasize the fact that each student is required to actually perform, in person, the above shop exercises and tests, and many more.

The Shop course is of extreme practical value, owing to the fact that the work covered in the lecture course is actually

done by each student, then inspected and passed upon by the instructor. This work is indispensable to one who wishes to know HOW, as well as WHY.

This course is open only to those who are taking the lecture course, or who pass an entrance examination.

Each student should provide himself with jumper, overalls, 6-inch screw-driver, 8-inch monkey wrench and a pair of 5-inch pliers, which can be purchased at the school if desired. The other tools are furnished by the school.

### SCHEDULE

**Day Course.** The Shop work will be scheduled for each afternoon except Saturday, from 1 to 5, Saturdays from 9 to 12 a. m., for three weeks of each course. On the fourth week, five and one-half days of Shop work will be given.

**Evening Course.** Shop work Tuesday and Friday evenings from 7 to 9.30. This course is nine weeks in length and is conducted throughout the year except during July, August and September.

For tuition rates see page 14.

For calendar see page 2.

### CHAUFFEURS' AND OPERATORS' ROAD COURSE

#### Pleasure Cars or Motor Trucks

This course is to accommodate those who wish to learn to drive pleasure cars or motor trucks and secure an Operators' or Professional Chauffeurs' License and is characterized by actual experience in driving up-to-date touring cars or trucks over all conditions of roads, including city traffic, and under expert instructors. This course illustrates the approved methods of managing the controlling levers, throttle, spark, clutches, brake, gear-shifter, accelerators, and involves thorough experience in turning in narrow streets, hill climbing and reversing.

Students seeking a Professional Chauffeurs' License in Massachusetts are required to pass a rigid examination, requiring the applicant to give a demonstration under the inspection of the State Board of Examiners.

*The use of the car for the demonstration at the Highway Commission is included in the regular Road Course without additional charge. Should the student fail to pass the State examination on the first trial, he is given an additional road lesson and the use of the car for a second examination without additional charge.*

The Road instruction in our school, therefore, is very thorough and is in charge of exceptionally careful and competent instructors.

## SCHEDULE

When the road course is taken alone, the time required is two weeks for the day course and three weeks for the evening course. When the road work is taken with the lecture and laboratory courses, the road lessons can be scheduled so as not to conflict with the lectures or laboratory exercises, thus enabling the student to complete the three courses, when taken during the day in four weeks; or, when taken in the evening, in nine weeks.

For tuition rates see page 14.

## CHAUFFEURS' AND OPERATORS' UNLIMITED COURSE Pleasure Cars or Motor Trucks

This course is a combination of the three previously described courses, viz: Lecture, Shop and Road as described on pages 10, 11 and 12, these three comprising the regular well-known and popular *Boston Y. M. C. A. Automobile Course*, and all are necessary to one who wishes to become a proficient chauffeur or operator.

When taking the *Chauffeurs' and Operators' Unlimited Course* the Road Lessons are given during the latter part or at completion of Lecture and Shop Courses, the time of taking them being optional with the student.

To all passing examinations in this course, a Special Unlimited Chauffeurs' and Operators' Diploma will be granted.

## AUTOMOBILE MACHINE SHOP REPAIR COURSE

This course provides instructions and experience for men wishing more advanced work than that given in the Operators' and Chauffeurs' Course. The instruction will be arranged to prepare a man to do the more difficult repairing on the car he drives or to prepare him to hold a position as repair man in a garage.

A fixed course is not laid out but must depend upon the ability of the student and his previous training and experience.

It has been found that graduates of the Operators' and Chauffeurs' Course are best adapted to this course, regardless of any previous experience with gasoline engines or automobiles.

The equipment of the repair Shop is as good as that in the first-class shops.

## SCHEDULE

Day Course. Five days a week from 9 A.M. to 5 P.M., with the exception of Saturday when the hours are from 9 to 12 M. The course is nine weeks in length and is repeated throughout the year.

Evening Course. Five evenings per week from 7 to 9.30 for eighteen weeks. The course is offered through the year except during July, August and September.

For tuition rates see page 14.

## Condensed Schedule and Tuition

All rates quoted below are in addition to membership in the Boston Young Men's Christian Association (\$2.00), which entitles the student to many privileges in the Association for one year. This membership fee is always payable upon entering as are also the tuition fees with the following exceptions:

In the Chauffeurs' and Operators' Unlimited Course, \$32.00 only (including the \$2.00 membership fee) is payable upon entering, and the balance of \$25.00 on or before taking the Road Course.

In the Machine Shop Repair Course \$32.00 only (including the \$2.00 membership fee) is payable upon entering, and the balance of \$25.00 at the completion of one-third of the course.

<i>Courses</i>	<i>Tuition</i>	<i>Length</i>	<i>Time</i>	<i>See Page</i>
Chauffeurs' and Operators' Lecture Course . . . . .	\$15.00	3 wks.	Day	10
(See note below) . . . . .		9 wks.	Evg.	
Chauffeurs' and Operators' Shop Course . . . . .	15.00	4 wks.	Day	11
(See note below) . . . . .		9 wks.	Evg.	
Chauffeurs' and Operators' Road Course . . . . .	25.00	2 wks.	Day	12
(See note below) . . . . .		3 wks.	Evg.	
Chauffeurs' and Operators' Unlimited Course				
Combining Lecture, Shop and Road Courses . . . . .	55.00	4 wks.	Day	13
(See note below) . . . . .		9 wks.	Evg.	
Automobile Machine Shop Repair Course . . . . .	55.00	9 wks.	Day	13
		18 wks.	Evg.	

### SPECIAL REDUCTION

Students registering for the lecture, shop and road courses and paying full tuition at time of entrance are given a reduction of \$5.00, making the cost for the three courses \$52.00 (including membership in the Boston Y. M. C. A.)

# Additional Information

## LOCATION

The school is centrally located in the popular Back Bay section of the city and in close proximity to prominent public buildings and institutions.

Our school is easily accessible from all parts of the city, and the various depots via Huntington Avenue and Massachusetts Avenue cars. Entrance is made through the Main Building at 316 Huntington Avenue or 288 St. Botolph Street.

## MEMBERSHIP

All students pursuing courses in the school must hold a membership in the Boston Young Men's Christian Association.

### *Privileges in the Association*

Students are reminded of the fact that when they enroll as students in the school they become members of the Association and as such are entitled to many privileges and are surrounded by uplifting influences. Ask for our Year Book which enumerates the many privileges open to members.

## A WORD AS TO PROSPECT

There is no occupation in which a small investment is capable of yielding so great a return. To the owner or prospective purchaser it means the saving of hundreds of dollars in repairs and up-keep. To the chauffeur it means a well-paying and responsible position at wages, much in excess of those paid in most lines of work. To the truck driver it means bright prospects in a new and growing industry with unlimited opportunities. To the repair man and garage keeper it means admission to a broad field of activity and a well-paid employment.

## EMPLOYMENT

We are frequently asked if we guarantee positions to those completing our courses. In reply we would state that we make the same guarantee that any college or high-grade school does, namely, that of a thorough course.

No reputable school ever guarantees a job to gain a student. The school maintains an active and proficient employment department. Upwards of two thousand men, graduates of our school, are holding positions as chauffeurs, a large number of whom have secured their positions through our employment department.

## **VISIT TO OUR SCHOOL URGED**

We urge all men contemplating taking an automobile school course to call at the office of the Department of Education, talk the matter over in detail and secure a visitor's pass to the school.

## **ADVISORY BOARD**

Attention is called to the members of our Advisory Board whose names appear in the front part of the catalogue. They are some of Boston's most prominent automobile representatives.

## **BACKWARD STUDENTS**

Should a student be deficient in the shop or lecture work at the close of his course, and be unable to pass the examination, he is privileged to remain a reasonable length of time and receive additional instruction without extra charge.

## **ADVANTAGES TO OUT-OF-TOWN STUDENTS**

The Association is exceptionally well prepared to be of assistance to those who come from distant places and are obliged to board in the city while taking the course. We have a selected list of rooms and boarding places. Employment is sometimes secured through our Employment Department for those who wish to earn money while taking our courses, in which case the usual fees charged by this department are required.

For additional information call on or write to Frank Palmer Speare, Director of Education, Boston Young Men's Christian Association, 316 Huntington Ave., Boston.

## Other Departments

### RECREATION AND HEALTH

ALBERT E. GARLAND, M.D., B.P.E., Director

*The physical work* is under the best supervision, and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative Hygienic and Education Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction, Hand ball courts. Basket Ball, Baseball and Athletics.

### RELIGIOUS WORK

NON-SECTARIAN

EDWIN W. PRICE, Secretary

In order that a young man may secure a well-balanced development and attain the true foundation for successful life work, the Association advises each member in planning his schedule to enter into one or more of the following activities:

Bible Study, Training for Christian Service, Sunday Meetings of Men, Personal Service Groups and The Twenty-Four-Hour-A-Day Club.

Ask for Bible Institute catalog and other printed matter.

### SOCIAL WORK

DAVID M. CLAGHORN, Secretary

The attention of members is called to the many opportunities in the Association for social service, and the following social features:

Newly Equipped Game Rooms	The Popular Novel Club
The Association Congress	The Land and Water Club
Camera Club	Glee Club

Recreation Headquarters at Riverside

Popular Social Evenings and Entertainments

### DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Secretary

*The Employment Department* is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

### BOYS' DEPARTMENT

JAS. G. BARNES, A.B., City Secretary

The physical, social, employment and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Members of the school may use the boys' Game and Social Rooms and take part in social activities, such as Entertainments, Minstrel Shows, Debates, Bible Classes, Clubs, etc.











